

Nebraska Air Quality Construction Permit Application

APPLICATION COVER SHEET AND CHECKLIST



Nebraska
DEQ

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Department of Environmental Quality
Air Quality Division – Construction Permit Unit
P.O. Box 98922, Lincoln, NE 68509-8922
877-834-0474 or 402-471-2189
<http://www.deq.state.ne.us>

CHECK
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Facility Name: AltEn, LLC

Nebraska Dept of Environmental Quality
By: _____ DEQ# 195 _____

Facility ID# (if known): 84069

Date: January 2013

\$1635
\$1,500.00

IMPORTANT: PLEASE READ THE GENERAL INSTRUCTIONS AT THE END OF THIS COVER SHEET

All applications must also include this completed cover sheet and completeness checklist. Please indicate below which application forms/sections are being included with this Construction Permit Application packet.

NOTE- Form 1.0 - 4.0 **MUST** be completed for each construction permit application. Failure to submit all sections of the forms will make the application incomplete and delay the permitting process significantly.

- ☒ FORM 1.0 – Application General Information
- ☒ FORM 2.0 – Air Dispersion Modeling Information
 - ☒ SECTION 2.1 – Emission Point Summary
 - ☐ SECTION 2.2 – Point Source Information
 - ☐ SECTION 2.3 – Volume Source Information
- ☒ FORM 3.0 – Pollutant Emissions Summary
 - ☒ SECTION 3.1 – Pollutant Emissions Summary (lb/hr)
 - ☒ SECTION 3.2 – Criteria Pollutant Emissions Summary (tons/yr)
 - ☒ SECTION 3.3 – Hazardous Air Pollutant Emissions Summary (tons/yr)
 - ☒ SECTION 3.4 – Greenhouse Gas Emissions Summary (lb/hr)
 - ☒ SECTION 3.5 – Greenhouse Gas Emissions Summary (tons/yr)
 - ☒ SECTION 3.6 – Carbon Dioxide Equivalent Summary (tons/yr)
- ☒ FORM 4.0 – Applicable Federal Requirements
 - ☒ SECTION 4.1 – New Source Performance Standard (NSPS) Requirements
 - ☒ SECTION 4.2 – National Emission Standards for Hazardous Air Pollutant (NESHAP) Requirements
 - ☐ SECTION 4.3 – Prevention of Significant Deterioration (PSD) Requirements
- ☒ FORM 5.0 – Facility Specific Information
 - ☐ SECTION 5.1 – Grain Handling
 - ☐ SECTION 5.2 – Mineral Processing
 - ☒ SECTION 5.3 – Ethanol Production
 - ☐ SECTION 5.4 – Concrete Batch Plant
 - ☐ SECTION 5.5 – Asphalt Production
 - ☐ SECTION 5.6 – Surface Coating
 - ☐ SECTION 5.7 – Natural Gas and Propane Production
 - ☐ SECTION 5.8 – Biodiesel Production
 - ☐ SECTION 5.9 – Fiberglass Manufacturing
 - ☐ SECTION 5.10 – {Reserved}



Nebraska Air Quality Construction Permit Application
APPLICATION COVER SHEET AND CHECKLIST

-Continued on Next Page-

- ☒ FORM 6.0 – Emission Sources
 - ☒ SECTION 6.1 – External Combustion Units
 - ☐ SECTION 6.2 – Internal Combustion Units
 - ☐ SECTION 6.3 – Incinerators
 - ☐ SECTION 6.4 – Uncontrolled Emission Points
 - ☒ SECTION 6.5 – Controlled Emission Points without Combustion
 - ☒ SECTION 6.6 – Controlled Emission Points with Combustion
 - ☒ SECTION 6.7 – Storage Tanks
 - ☒ SECTION 6.8 – Cooling Towers
 - ☒ SECTION 6.9 – Haul Roads
 - ☒ SECTION 6.10 – Equipment Leaks
 - ☐ SECTION 6.11 – Storage Piles

- ☒ FORM 7.0 – Emission Control Devices
 - ☒ SECTION 7.1 – Combustion Flare
 - ☐ SECTION 7.2 – Thermal Oxidizer (TO)/Regenerative Thermal Oxidizer (RTO)
 - ☒ SECTION 7.3 – Baghouse/Cyclone
 - ☒ SECTION 7.4 – Scrubber

Nebraska Air Quality Construction Permit Application
APPLICATION COVER SHEET AND CHECKLIST

Application Completeness Checklist (must be completed for all applications):

- a. ☒ The application does not include any confidential information and no application materials are marked confidential. (Pay particular attention to drawings, figures, diagrams, and specification sheets from manufacturers, as these are the most often overlooked materials that have "confidential" stamped on them.)
- b. ☐ The application does include confidential information and the appropriate request for confidentiality in accordance with Title 115 – Rules of Practice and Procedure is provided. Refer to the NDEQ Guidance Document titled "Air Quality Confidentiality Claims" available on our website for more information.
- c. ☒ The application is typed or filled out using a black or blue pen.
- d. ☒ The original application is signed and dated by the responsible official. (Section 1.1)
- e. ☒ The relevant sections have been duly marked on the front page of this form and filled out completely to the best of my ability (If you are unsure as to which sections pertain to your facility, please contact the NDEQ).
- f. ☒ Instructions for each section have been read thoroughly (If you are unsure as to what information is needed, please contact the NDEQ).
- g. ☒ Emissions calculations – calculations of potential emissions (controlled and uncontrolled) of all regulated air pollutants have been provided, with all supporting documentation included and units clearly defined. Include emission factors and their source (i.e. AP-42, FIRE, etc).
- h. ☒ Application Fee of the proper amount is enclosed. (Section 1.1)
- i. ☒ Air pollution control equipment for each emission point is identified and described. (Section 2.1)
- j. ☒ Emission point/stack data is identified and described.
- k. ☒ Plant Diagram shows heights and locations of all buildings, property boundaries and location of all stacks and emission points.
- l. ☒ Detailed Project Summary clearly outlines the intent and processes at the facility. (Section 1.1)
- m. ☐ Ambient Air Quality Analysis is provided, including the modeling data and results, where required (see Modeling Guidance or contact NDEQ). If an analysis is not provided, include an explanation for why it wasn't.
- n. ☐ Application is for a Prevention of Significant Deterioration (PSD) permit.
- o. ☒ One (1) original and two (2) copies (3 copies for PSD applications) of the complete application have been sent to the proper address. If an electronic version of the application is submitted, only one hard-copy original and one hard-copy copy are required regardless of application type.
- p. ☒ Additional information not identified on application forms is included and clearly identified.

I have completed this application cover sheet and completeness checklist and can attest that the accompanying construction permit application materials are complete to the best of my ability. In completing this form, I understand the following: That if any of the required information is not included in this application submittal, the application will be placed in a suspended file until the Department receives the necessary materials and information; That my completion of this Cover Sheet and Checklist does not assure this is a complete application and the Department may request additional information to complete the permit; That by checking the box indicating this application does not include confidential information, the application will be placed in the public files and be subject to public review; and, that the application review will not commence until all required information is received and the application is determined to be complete.

Jim Stewart / 
Name / Signature of Application Preparer

Date

01/29/2013





Department of Environmental Quality
Air Quality Division – Construction Permit Unit
P.O. Box 98922, Lincoln, NE 68509-8922
877-834-0474 or 402-471-2189
<http://www.deq.state.ne.us>

NDEQ: USE ONLY

Amount Paid:

Check #:

Receipt #:

Application #:

Nebraska Air Quality Construction Permit Application
Form 1.0: Construction Permit Application General Information
Section 1.1: AQ Construction Permit General Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION
Do NOT use pencil to fill out this application. Please type responses or use black ink.

Administrative Information

1) Facility Name: AltEn, LLC		2) NDEQ Facility ID#: 84069	
3) Facility SIC Code(s): 2869		4) Facility NAICS Code(s): 325193	
5) Facility Description: Fuel Ethanol Production Facility			
6) Facility Physical Address: 1344 County Road 10			
7) Facility City: Mead		8) State: Nebraska	9) Zip: 68041
10) County: Saunders	$\frac{1}{4}$	$\frac{1}{4}$	Section: 12 Township: 14N Range: 08E
11) Indicate the adjacent states that the facility is located within 50 Miles of: <input type="checkbox"/> None <input type="checkbox"/> Colorado <input checked="" type="checkbox"/> Iowa <input type="checkbox"/> Kansas <input type="checkbox"/> Missouri <input type="checkbox"/> South Dakota <input type="checkbox"/> Wyoming			12) UTM Coordinates: Zone: 14 X: 711329.29 E Y: 4563580.18N
13) Company Name: AltEn, LLC			
14) Company Mailing Address: 1344 County Road 10			
15) Company City: Mead		16) State: NE	17) Zip: 68041
18) Is The Business Incorporated? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, State of Incorporation:			

Contact Information

19) Facility Contact Person: Jim Stewart	
20) Facility Contact Person's Title or Responsibility: Plant Manager	
21) Phone Number:	23) Fax Number:
22) Alt. Phone Number: 319-360-2127	24) Email Address: jstewart@mrgkc.com
25) Who is the Primary Contact for Application-related Questions?: <input type="checkbox"/> Facility Contact <input checked="" type="checkbox"/> Other (fill in 25-30 below)	
26) Primary Contact Name: Andrea Foglesong	
27) Primary Contact Company: ERI Solutions, Inc.	
28) Phone Number: (316) 927-4260	30) Fax Number: (316) 927-4266
29) Alt. Phone Number:	31) Email Address:
32) Hard-copy drafts and the final permit documents should be sent to: <input checked="" type="checkbox"/> Facility Contact <input type="checkbox"/> Other (fill in 32-37 below)	
33) Document Recipient's Name and Title: Jim Stewart, Plant Manager	
34) Document Recipient's Mailing Address: 1344 County Road 10	
35) Document Recipient's City: Mead	36) State: NE 37) Zip: 68041

Construction Permit Fee Information

38) Construction Permit Application Fee Enclosed (see instructions): <input type="checkbox"/> \$3,000 <input checked="" type="checkbox"/> \$1,500 <input type="checkbox"/> \$250 <input type="checkbox"/> N/A
Make check payable to: Nebraska Department of Environmental Quality Memo: Air Quality CP Application Fee



Nebraska
DEQ

Air Quality Construction Permit Application Form 1.0: Application General Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 1.1: AQ Construction Permit General Information (continued)

Project Information

- 39) This Application is For: (Check One)
- a. ☐ Initial Construction Permit for a New Facility
 - b. ☒ **Modification of an Existing Facility**
 - c. ☐ Significant Revision of an Existing Construction Permit(s) #: _____
 - d. ☐ Historical Construction/Modification

40) Projected Date to Begin Actual Construction: N/A

41) Projected Date of Startup: ASAP

42) Estimated Cost of Project: N/A

Historical Permitting Information ☐ N/A

43) What year was the facility originally constructed? 2005

44) Enter the date the most recent Air Quality Construction Permit was issued (mm/dd/yyyy):

45) Provide a brief summary of each modification below (Attach additional sheets if needed):

Date of Modification	Date Permitted	Summary of Modification
<u>2010</u>	<u>2011</u>	<u>Change of Ownership</u>
<u>2007</u>	<u>2007</u>	<u>Change of Ownership</u>

Source Information

46) Is the existing source classified as a **Major** Prevention of Significant Deterioration (PSD) Source? ☐ Yes ☒ No ☐

47) Is this project subject to PSD Review? ☐ Yes ☒ No If Yes, complete Section 4.3

48) Is the project subject to State toxic BACT Requirements in Chapter 27? ☐ Yes ☒ No If Yes, attach T-BACT analysis

49) Is the Source subject to NESHAP or MACT Requirements? ☐ Yes ☒ No If Yes, complete Section 4.2

Attestation of Citizenship

50) Is this application being submitted on behalf of an individual (if Yes go to 51, NO go to 52) ☐ Yes ☒ No

51) Is the applicant a citizen of the United States. ☐ Yes ☐ No

-or-

Is the applicant is a qualified alien under the Federal Immigration and Nationality Act
(applicant must provide immigration status, alien number and USICS documentation)

☐ Yes ☐ No

52) Responsible Official Certification Statement

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this Air Quality Construction Permit application are true, accurate, and complete. I also certify that all copies, including the electronic copy, of this application are identical in content to the original.

Signature (See Instructions for Signatory Requirements)

Date (mm/dd/yyyy):

Typed or Printed Name: Jim Stewart

Title: Plant Manager



Air Quality Construction Permit Application Form 1.0: Application General Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 1.1: AQ Construction Permit General Information (continued)

53) Project Description (attach directly behind this page)

For New Facilities: On a separate sheet(s) of paper, provide a detailed narrative of the proposed construction at the facility. This should include all emission units, processes, and pollution control equipment being constructed. The descriptions must be complete and particular attention must be given in explaining all stages in the process that may result in a discharge of any air pollutant. All obtainable data must be supplied concerning the nature, volume, particle size, weights, chemical composition and concentrations of all types of air pollutants that are expected to be emitted by the source. All emission point, emission unit, and control equipment identification numbers should be present in this description appropriately.

For Existing Facilities: On a separate sheet(s) of paper, provide a detailed narrative of the production, operations, processes, and emission units that currently exist at the facility. This should include all emission units, processes, and pollution control equipment that are currently in operation. The descriptions must be complete and particular attention must be given in explaining all stages in the process where there is a discharge of any air pollutant. All obtainable data must be supplied concerning the nature, volume, particle size, weights, chemical composition and concentrations of all types of air pollutants that are emitted by the source. In addition to existing information, narrative of the proposed construction/modification occurring at the source must also be discussed with emphasis on the additions/changes occurring. The same information presented for the existing sources should also be provided for the new construction/modification. Ensure that the narrative is clear as to what is new, existing, and/or being modified. All emission point, emission unit, and control equipment identification numbers should be present in this description appropriately.

54) Facility Layout Diagram(s)

On a separate sheet(s) of paper, provide a detailed diagram or site drawing that includes all new and existing buildings, stacks, and emission points identified in this application. Make sure all elements of the drawing are properly identified, drawn to scale, and are consistent with other sections of this application. The plant diagram should indicate the height and location of all buildings/structures and property boundaries. Fences or other public access restrictions should be identified and described. Clearly indicate which elements currently exist and which will be built/installed/modified. Area maps should generally be 1"=500' and detail maps should generally be 1"=50'. An aerial photo with the facility boundary overlay works well in showing the surrounding land use. (See Sample Plant Layout Diagram for an example)

55) Process Flow Diagram(s)

On a separate sheet(s) of paper, provide a flow chart that includes all processes, process equipment, emission units, stacks, air pollution control equipment, and fuel burning equipment identified in this application. When finished, this diagram should show how products and materials (including fuel) flow through each process. Make sure all units are identified and properly cross-referenced to match other Sections of the application (including existing units). Provide an inclusive date from which the diagram is valid. Clearly indicate which elements exist and which are new. (See Sample Process Flow Diagram for an example of this document)

56) Air Dispersion Modeling Information

Modeling Guidance for determining whether air dispersion modeling may be required can be found on the NDEQ website, or contact the Department for assistance. Please fill out Form 2.0, Sections 2.2 and 2.3 to provide modeling-related information whether or not modeling is submitted to the Department. **Not Applicable**

Has an air dispersion modeling protocol been established for this source and reviewed by NDEQ? ☐ Yes ☒ No

Air dispersion modeling and modeling checklist submitted with application? ☐ Yes ☒ No

Note: If air dispersion modeling is required but not included with this application, please provide complete modeling submittal and modeling checklist within 30 days to avoid delays in processing this permit application. A delay in submitting the modeling can result in the application being placed on hold and the Department cannot guarantee work will resume immediately upon receipt of modeling. One original and two copies of the modeling submittal are required.

**PROJECT
DESCRIPTION**



AltEn, LLC
Air Construction Permit Modification Application
From the
Nebraska Department of Environmental Quality

Facility Name: AltEn, LLC
Facility ID Number – 84069

SIC Code: 2869; Industrial Organic Chemicals Not Elsewhere Classified

NAICS Code: 325193; Ethyl Alcohol Manufacturing

Source Location: 1344 County Road 10
Mead, Nebraska

Physical Location: Section 12, Township 14 North, Range 08 West
Saunders County

Operating Schedule: All processes operate continuously, 24 hrs/day, 365 days/yr, except for scheduled maintenance.

Facility Contact: Jim Stewart
Plant Manager, AltEn, LLC
319-360-2127
jstewart@mrgkc.com

Technical Contact: Andrea Foglesong
Managing Director, Environmental Affairs, ERI Solutions, Inc.
316-927-4260
Andrea.Foglesong@erisolutions.com

CONSTRUCTION PERMIT MODIFICATION APPLICATION

AltEn, LLC owns and operates a 24.1 million gallon denatured ethanol plant located in Mead, Saunders County, Nebraska. An air quality focused evaluation was conducted at AltEn on January 5, 2012 by the Inspection and Compliance Unit of NDEQ, which required AltEn to modify their existing permit to include discrepancies discovered during the evaluation. Therefore, AltEn is submitting this air permit application for certain existing plant processes and equipment that was not included in the original permitting. The equipment not included in previous permits is identified in the "Air Emissions Units Technical Specification" section in this application documentation. Additionally, the NDEQ evaluation had several points addressing findings of the onsite inspection. These points are addressed in the "Findings of the NDEQ Air Quality Evaluation Performed on January 5, 2012" section in this application documentation. Grain (mainly corn) will continue to be the primary raw material and the facility will keep the ability to produce wet distiller's grains and solubles (WDGS) for animal feed. However, the facility would like to

incorporate milo as a feedstock as well as the possibility of other feedstocks depending on availability. The facility will provide the necessary notifications or modifications if a different feedstock is to be incorporated into facility operations. The facility is located adjacent to a cattle feedlot. Manure from the feedlot, as well as thin stillage and wastewater from the ethanol plan is converted into biogas in an anaerobic digester and will be used as fuel in the ethanol plant's boilers.

FACILITY BACKGROUND

The facility was issued their initial construction permit in January 2005 under the name Nebraska BioClean. A construction permit modification was issued in 2007 which changed the facility's name to E³ BioFuels – Mead, LLC. The facility was then sold to AltEn, LLC after bankruptcy in 2010 at which point AltEn requested all permitting for the facility be transferred into their name.

The United States Environmental Protection Agency (EPA) presently considers fuel grade ethanol manufacturing facilities to be "*chemical processing plants*". This permit application will propose federally enforceable conditions that limit emissions of PSD criteria air pollutants to below the major source threshold of 250 tons per year. Emission offset requirements or mitigation will not be triggered as the plant is carefully engineered to emit at rates below PSD *de minimus* triggers as a synthetic minor source of air contaminants. The permit requires use of control equipment that will limit the emission of hazardous air pollutants (HAP) to less than the HAP major source thresholds of ten (10) tons per year for a single HAP and twenty-five tons (25) per year for any combination of HAPs.

Emissions estimates of particulate matter (PM), PM with an aerodynamic diameter less than or equal to ten microns (PM₁₀), PM with an aerodynamic diameter less than or equal to 2.5 microns (PM_{2.5}) oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x) and volatile organic compounds (VOCs) are provided. Continued operation of the facility is subject to the provisions of NDEQ Rules and Regulations.

FINDINGS OF THE NDEQ AIR QUALITY EVALUATION PERFORMED ON JANUARY 5, 2012

Below is a list of potential permitting concerns identified as a result of the inspection that are addressed in this permit application.

1. *The replacement for boiler B-2 (damaged by an explosion) should be evaluated by the Permitting Section to ensure it meets the sizing of the original construction permit.*

The boiler was replaced with a 1,200 BHP (~40.14 MMBtu/hr) boiler which is addressed in this permit modification application.

2. *The auxiliary boiler should be evaluated for inclusion in the construction permit modification.*

The Auxiliary boiler (EP-15) is included in this permit modification application.

3. *You must have as-built drawings available for review by inspectors.*

AltEn is currently in the process of obtaining as-built drawings.

4. *Remove from the construction permit the 275 HP diesel engine.*

The emergency fire water pump engine is an electric unit and does not combust diesel. AltEn, LLC requests the engine is removed from the permit.

5. *The scalper/day tank baghouse should be considered for inclusion in the construction permit.*

The scalper/day tank Baghouse (EP-2) is included in this permit modification application.

6. *Construction permit condition XIII(b)(1) should be considered for modification to identify the correct type of grain cleaning equipment at the site.*

This permit modification identifies the correct type of equipment the facility has onsite.

7. *Construction permit condition XIII(b)(1) should be considered for modification to correctly identify the equipment controlled by the mill baghouse, EP-3.*

This permit modification identifies the correct type of equipment the facility has onsite.

8. *The installation of an RTO must be evaluated for construction permit requirements prior to installing the unit.*

Consideration of a RTO is being recommended by the NDEQ due to failing test results at the ethanol absorber (EP-6) from the testing completed on October 2007. However, AltEn feels it is extremely important to explain that the previous testing was not conducted under the most ideal circumstances. Operations at the plant were inconsistent around the time the testing was completed and does not reflect normal operations at the facility. The facility proposes completing stack testing on the ethanol absorber after the facility resumes operation and a steady state is achieved. If emissions from the ethanol absorber are not demonstrating compliance with permitted limits with consistent operations and water flow, the facility will utilize chemical additive to increase the absorption of certain VOC and HAP chemicals. AltEn would like the opportunity to exhaust operational options prior to committing to the expense of installing a RTO.

9. *Obtain a current site diagram identifying the re-plotted site boundaries, ownership and the location of all facility equipment and emissions points.*

AltEn is currently in the process of obtaining current site diagram identifying the re-plotted site boundaries, ownership and the location of all facility equipment and emission points.

AIR EMISSION UNIT TECHNICAL SPECIFICATIONS

The following equipment is currently at the facility for which this permit modification application will include:

1. Grain Processing Facilities:

- a. Receiving and unloading equipment with one (1) grain storage silo with a capacity of

200,000 bushels.

- b. One day bin with storage capacity of 5,000 bushels, one (1) scalper and one (1) hammermill.
- c. Equipment necessary for loading wet distiller's grains and solubles (WDGS) into trucks/containers for shipment off-site.

2. One (1) Ethanol Manufacturing Plant: storage tanks, various pumps, piping and valves, fermentation process vessels, ethanol absorber, distillation units, molecular sieves, condensers, centrifuges, evaporators, and product loadout.

Specific plant equipment:

- a. One (1) 54.0 MMBtu/hr and one (1) 49.59 MMBtu/hr Boilers: for the purpose of producing steam requirements of the facility. Each boiler can operate on a combination of biogas and natural gas or on each fuel alone. **Two (2) 54 MMBtu/hr boilers are currently permitted for this facility. One of the boilers were damaged and replaced with the 49.59 MMBtu/hr boiler, which was not previously permitted. The combined combustion for the boilers will be limited to 66 MMBtu/hr or 578,160 MMBtu/year.**
- b. One (1) 20 MMBtu/hr Auxiliary natural gas – fired Boiler: for the purpose of providing a backup unit for steam generation. **The Auxiliary back-up boiler was not previously permitted. The Auxiliary boiler is expected to operate no more than 2,000 hours per year.**
- c. Two (2) Tanks – 22,600 Gallons (ea): each (15.5' dia. x 16' high) for the purpose of storing anhydrous ethanol. Each tank is equipped with a fixed roof that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- d. One (1) Tank – 22,600 Gallons: (15.5' dia. x 16' high) for the purpose of storing 190 proof (95%) ethanol. The tank is equipped with a fixed roof that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- e. One (1) Tank – 22,600 Gallons: (15.5' dia. x 16' high) for the purpose of storing denaturant (natural gasoline). The tank is equipped with an interior floating roof and seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- f. One (1) Tank – 535,830 Gallons: (47.75' dia. x 40' high) for the purpose of storing denatured ethanol. The tank is equipped with an interior floating roof and seal system that meets the applicable requirements of 40 CFR Part 60, Subpart Kb.
- g. Piping, Pumps and Valves: pumps, valves and flanges in light liquid service. See emission inventory for equipment counts based on similar sized facility. All piping, pumps and valves are constructed, operated and maintained in accordance with the applicable requirements of 40 CFR Part 60, Subpart VV.
- h. One (1) Truck Loading Terminal for the purpose of transferring denatured ethanol to

trucks for shipment offsite. Truck loading will be equipped with a loadout vapor combustion unit in order to reduce VOC emissions during truck loadout.

- i. One (1) cooling tower with a design water circulation rate of 866,640 gallons per hour. The cooling tower will be constructed with approximately 2 cells.
- j. Plant roads. All roads on plant property will be paved.
- k. Grain unloading system and one (1) grain storage silo (200,000 bushels capacity) ventilated to a 9,000 acfm baghouse.
- l. Grain Scalping/Day Tank system ventilated to an estimated 5,000 acfm baghouse. Grain Scalping/Day Tank Baghouse was not previously included in permit.
- m. One (1) Hammermill and conveyor ventilated to a 3,300 acfm baghouse.
- n. One (1) Ethanol Absorber (aka CO₂ Scrubber): for the purpose of removing VOCs from the carbon dioxide by-product stream. The two-stage scrubber is designed to eliminate HAPs and VOCs from the CO₂ stream.
- o. Wet Cake Storage and Loadout Equipment: all wet cake will be utilized at the adjacent feedlot. The wet cake is conveyed from the centrifuge to the concrete storage pad, from which most will be transferred by front-end loader to the adjacent feedlot.
- p. Two (2) Aqueous Ammonia Storage Tanks.

3. One (1) Anaerobic Digestion System

- a. Two (2) Anaerobic Digesters: used to produce biogas for the ethanol plant boilers.
- b. One (1) Digester Flare: used to burn off excess biogas from the anaerobic digester units during periods when the boilers are not burning all of the biogas generated.

AIR POLLUTION CONTROL EQUIPMENT

All air pollution control equipment is properly installed, operated and maintained at all times whenever the emissions source that it is designated to control is operating.

- 1. One (1) Fabric Filter Baghouse (EP-1) for the purpose of controlling particulate emissions from grain unloading, grain processing and grain storage. The unit is designed for a 9,000 cubic foot per minute flow rate while operating at and ambient temperature.
- 2. One (1) Fabric Filter Baghouse (EP-2) for the purpose of controlling particulate matter from grain scalping and the day tank. The unit is designed for an estimated 5,000 cubic foot per minute flow rate while operating at an ambient temperature. Exact specifications of this baghouse count not be located, therefore this is permitted with estimated specifications. The specifications can be verified via stack testing upon start-up of unit.
- 3. One (1) Fabric Filter Baghouse (EP-3) for the purpose of controlling particulate matter from grain

operation of one hammermill. The unit is designed for a 3,300 cubic foot per minute flow rate while operating at an ambient temperature.

4. One (1) flare (EP-9) for the purpose of controlling biogas emissions from the anaerobic digestion system when the boilers are not burning all the biogas generated.
5. One (1) flare (EP-12) meeting the design requirements of 40 CFR 60.18 will be used for the purpose of controlling VOC emissions from truck loadout.
6. One (1) Ethanol Absorber (aka CO2 Scrubber) (EP-6) for the purpose of removing VOCs from the carbon dioxide by-product stream. The two stage scrubber is designed to eliminate HAPs and VOCs from the CO2 stream.

AIR EMISSIONS ESTIMATES

The following are "Requested Limits" for the Permit to Operate for the 24.1 MMgpy plant. Estimated operating emissions are based on 24 hours/day 365 days/year. It is important to note that the plant plans to shut a minimum of twice per year, therefore "Estimated Operating" is a conservative estimate that will not be reached under normal operating conditions.

POLLUTANT	Emissions (tons per year for 24.1 MMgpy)		
	Potential-to-Emit ¹		Estimated Operating ²
	Pre-Permit	Requested Limits	
PM	0	< 100	29.24
PM ₁₀	0	< 100	19.48
PM _{2.5}	0	< 100	18.49
NO _x	0	< 100	53.62
CO	0	< 100	28.15
SO _x	0	< 100	98.31
VOC	0	< 100	76.77
HAPs	0	< 25	17.44

1

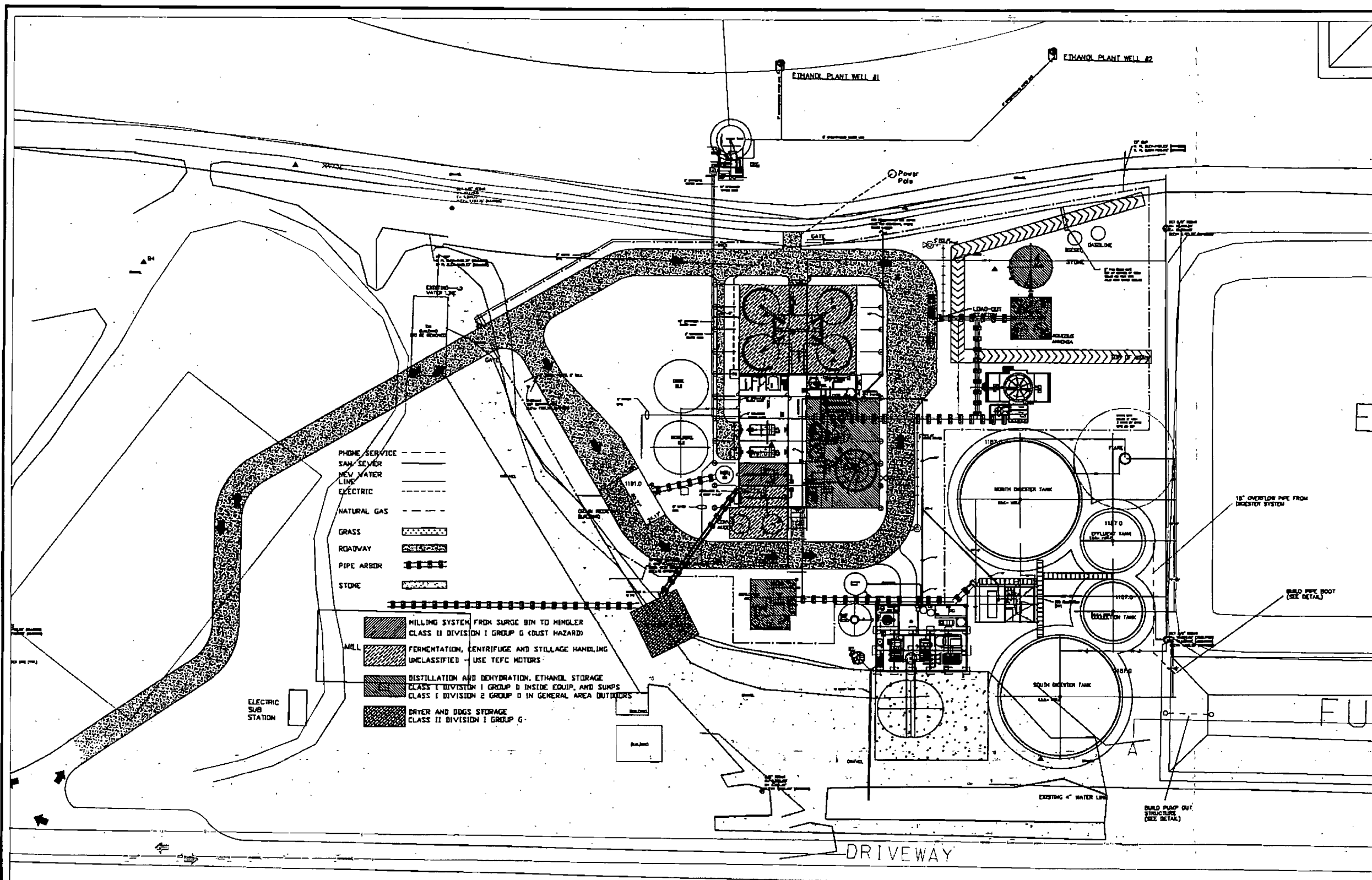
Potential-to-emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, is treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.

2

Estimated operating emissions are those emissions from a stationary source based on proposed conditions and hours of operation.

SITE LAYOUT





0" CUT TO
SOIL / USABLE
0" CUT TO
SOIL

SCALE: 1"=50'

3011 Center Dr.
Fort Worth, TX 76108
281-485-3403

Drilling

INDUSTRIAL ELECTRICAL CONSULTING
Industrial • Commercial • Institutional

3000 Maple Street
P.O. Box 47
Mead, NE 68342
402-483-1300
402-483-1303
402-483-1304
402-483-1305

CERTIFICATION:

E3 BioFuel Mead LLC
SAUNDERS COUNTY, NEBRASKA

ELECTRICAL CLASSIFICATION

REVISION

DRAWN BY: MA
CHECKED: FAF
DATE
PROJ. NO. E3BF-001
CAD FILE:

DWG. NO.
EAC-1

**PROCESS FLOW
DIAGRAM**



1





Nebraska
DEQ

Air Quality Construction Permit Application Form 2.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 2.1: Emission Point Summary

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Complete the following table so that all emission points, control equipment, and emission units are accounted for. Use multiple Section 2.1 forms, if needed, so that all emission points, control equipment, and emission units are included. If you have any questions, contact the Nebraska Department of Environmental Quality via the Air Quality Permitting Hotline at (877) 834-0474 or the Air Quality Permitting Section at (402) 471-2189. Source Classification Codes (SCC) are available on the NDEQ website.

Please check ☐ if a separate summary document is used as a replacement for this Section. If a replacement document is used, it must contain all of the information asked for in this form. Identify separate summary document with the title of this Section and attach to this form.

Emission Point ID#	Control Equipment ID#	Emission Unit ID#	Source Classification Code (SCC)	Previous Emission Point ID# (For existing emission points only)	Emission Source/Process Description
EP-1	EP-1	EP-1	30200741	EP-1	Grain Unloading Baghouse
EP-2	EP-2	EP-2	30200743	EP-2	Scalper/Day Tank Baghouse
EP-3	EP-3	EP-3	30200743	EP-3	Hammermill Baghouse
EP-4	-	EP-4	10300602	EP-4	Package Boilers
EP-5	-	EP-5	30205091	EP-5	Fugitive Components
EP-6	EP-6	EP-6	30200998	EP-6	Ethanol Absorber
EP-7	-	EP-7	Multiple	EP-7	Liquid Storage Tanks
EP-8	-	EP-8	30205052	EP-8	Truck Loadout Fugitives
EP-9	EP-9	EP-9	30199999	EP-9	Digester Flare
EP-10	-	EP-10	30200755	EP-10	Wet DGS Storage
EP-11	-	EP-11	30200755	EP-11	Wet DGS Handling



Nebraska

DEQ**Air Quality Construction Permit Application**
Form 2.0: Emission Point Information

Emission Point ID#	Control Equipment ID#	Emission Unit ID#	Source Classification Code (SCC)	Previous Emission Point ID# (For existing emission points only)	Emission Source/Process Description
EP-12	EP-12	EP-12	30190023	EP-12	Loadout Vapor Combustion Unit
EP-13	-	EP-13	38500101	EP-13	Cooling Tower
EP-14	-	EP-14	30500290	EP-14	Paved Roads
EP-15	-	EP-15	10300602	EP-15	Auxiliary Boiler
EP-16	-	EP-16	30200532	-	Grain Fugitives



Air Quality Construction Permit Application Form 2.0: Emission Point Information

DATE: January 2013

84069

Section 2.2: Air Dispersion Modeling Point Source Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Point Source Information

[illegible]



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Air Quality Construction Permit Application
Form 2.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 2.3: Air Dispersion Modeling Area and Volume Source Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Area Source Information

Emission Point ID#	Emission Point Description	UTM X (m)	UTM Y (m)	Elevation (m)	X-Length (m)	Y-Length (m)	Release Height (m)	Angle (degrees)	Initial Vert. Dimension (m)
Refer to previously submitted modeling report.									

Volume Source Information

Emission Point ID#	Emission Point Description	UTM X (m)	UTM Y (m)	Elevation (m)	Initial Lateral Dimension (m)	Initial Vertical Dimension (m)	Release Height (m)
Refer to previously submitted modeling report.							

CP Form 3.0, Section 3.1
08-103

Section 3.1: Criteria Pollutant Emission Summary (lb/hr) Attachment

AltEn, LLC -Mead, Nebraska

Facility ID: 84069

Unit ID	Emission Source(s)	PM (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	SO2 (lb/hr)	NOx (lb/hr)	CO (lb/hr)	VOC (lb/hr)	HAP (lb/hr)
EP-1	Grain Unloading Baghouse	0.62	0.62	0.62					
EP-2	Scalper/Day tank Baghouse	0.34	0.34	0.34					
EP-3	Hammermill Baghouse	0.28	0.28	0.28					
EP-4/EP-9	Package Boilers/Digester Flare	0.91	0.91	0.91	22.44	11.69	5.81	0.65	0.44
EP-5	Fugitive Components							3.27	0.57
EP-6	Ethanol Absorber	2.00	1.00	1.00				12.00	2.95
EP-7	Liquid Storage Tanks							0.87	0.003
EP-8	Truck Loadout							0.28	0.004
EP-10	Wet DGS Storage	0.001	0.0002	0.0002				0.19	0.01
EP-11	Wet DGS Handling							0.19	
EP-12	Loadout Vapor Combustion Unit	0.040	0.040	0.04	0.003	0.09	0.23	0.03	
EP-13	Cooling Tower	0.87	0.87	0.87					
EP-14	Paved Roads	1.44	0.29	0.07					
EP-15	Auxiliary Boiler ¹	0.15	0.15	0.15	0.01	2.00	1.68	0.11	0.04
EP-16	Fugitives (grain)	0.15	0.07	0.06					
Totals, Plantwide (lb/hr)		6.79	4.56	4.34	22.45	13.79	7.72	17.59	4.01

NOTES:

¹ The Auxiliary Boiler lb/hr emissions are based on 2,000 hours/year. All other equipment is based on 8,760 hours/year



FACILITY NAME: AltEn, LLC **DATE:** January 2013

NDEQ Facility ID#: 84069

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or print using blue or black ink.

Please check ☒ if a separate summary document is used as a replacement for this Form. Identify separate summary document with the title of this Form and attach. This can be a combined summary with Sections 3.1 & 3.3.

Emission Point ID#	PM (ton/yr)	PM ₁₀ (ton/yr)	PM _{2.5} (ton/yr)	NO _x (ton/yr)	SO _x (ton/yr)	CO (ton/yr)	VOC (ton/yr)
Refer to attached to Potential to Emit Emission Summary							
TOTAL	29.24	19.48	18.49	53.62	98.31	28.15	76.66

Section 3.2: Criteria Pollutant Emission Summary (ton/yr) Attachment

AltEn, LLC -Mead, Nebraska

Facility ID: 84069

Unit ID	Emission Source(s)	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	SO2 (tpy)	NOx (tpy)	CO (tpy)	VOC (tpy)	HAP (tpy)
EP-1	Grain Unloading Baghouse	2.70	2.70	2.70					
EP-2	Scalper/Day tank Baghouse	1.50	1.50	1.50					
EP-3	Hammermill Baghouse	1.24	1.24	1.24					
EP-4/EP-9	Package Boilers/Digester Flare	3.97	3.97	3.97	98.29	51.22	25.47	2.86	1.91
EP-5	Fugitive Components							14.33	2.50
EP-6	Ethanol Absorber	8.76	4.38	4.38				52.56	12.92
EP-7	Liquid Storage Tanks							3.83	0.02
EP-8	Truck Loadout							1.21	0.02
EP-10	Wet DGS Storage	0.005	0.001	0.001				0.82	0.04
EP-11	Wet DGS Handling							0.83	
EP-12	Loadout Vapor Combustion Unit	0.160	0.160	0.16	0.013	0.40	1.01	0.12	
EP-13	Cooling Tower	3.80	3.80	3.80					
EP-14	Paved Roads	6.31	1.26	0.31					
EP-15	Auxiliary Boiler	0.15	0.15	0.15	0.01	2.00	1.68	0.11	0.04
EP-16	Fugitives (grain)	0.64	0.32	0.28					
Totals, Plantwide (tons/yr)		29.24	19.48	18.49	98.31	53.62	28.15	76.66	17.44



Nebraska
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Air Quality Construction Permit Application Form 3.0: Emissions Summary

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 3.3: Hazardous Air Pollutant Emissions Summary

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or print using blue or black ink.

Complete the following table so that all emission points are accounted for. Use multiple Section 3.3 forms, if needed, so all emission points are included. Include the Hazardous Air Pollutants (HAP) that will be emitted in the largest quantities source-wide in the top row. List each emission point that will emit any HAP in the Emission Point ID# column. For each emission point, indicate the quantity, **in tons per year**, of HAP that will be emitted in the respective column. Total HAPs should be the sum of the entire column or row. If you have any questions, feel free to contact the Nebraska Department of Environmental Quality via the Air Quality Permitting Hotline at (877) 834-0474, or the Air Quality Permitting Section at (402) 471-2189.

Please check ☐ if a separate summary document is used as a replacement for this Form. Identify separate summary document with the title of this Form and attach. This can be a combined summary with Sections 3.1 & 3.2.

Hazardous Air Pollutants →	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)	TOTAL HAP (ton/yr)
Emission Point ID# ↓															
	Refer to attached HAPs Summary														
TOTAL HAPs															17.44

Section 3.3: Hazardous Air Pollutant Emissions Summary (ton/yr) Attachment

AltEn, LLC -Mead, Nebraska

Facility ID: 84069

Compound	WDGS Storage & Handling	Ethanol Absorber	Package Boilers	Aux. Boiler	Fugitive losses	Product Storage	Truck loading	TOTAL
	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Acrolein	0.0017	1.752			0.064	0.0004	0.0002	1.82
Formaldehyde	0.0222	1.7520	0.0334	0.0015	0.0024	0.0004	0.0002	1.81
Acetaldehyde	0.0111	7.6650			2.2212	0.0007	0.0003	9.90
Methanol	0.0044	1.7520			0.2150	0.0007	0.0003	1.97
Hexane			0.8007	0.0353		0.0111	0.0047	0.85
Toluene			0.0015	0.0001		0.0011	0.0014	0.00
Benzene			0.0009	0.0000		0.0006	0.0024	0.00
Nickel			0.0009	0.0000				0.0010
Chromium			0.0006	0.0000				0.0007
Dichlorobenzene			0.0005	0.0000				0.0006
Cadmium			0.0005	0.0000				0.0005
Naphthalene			0.0003	0.0000			0.0000	0.0003
Manganese			0.0002	0.0000				0.0002
Mercury			0.0001	0.0000				0.0001
Arsenic			0.0001	0.0000				0.0001
Cobalt			0.0000	0.0000				0.0000
2-Methylnaphthalene			0.000011	0.0000				0.000011
Phenanthrene			0.000008	0.0000				0.000008
Pyrene			0.000002	0.0000				0.000002
Fluoranthene			0.000001	0.0000				0.000001
Fluorene			0.000001	0.0000				0.000001
Xylenes						0.0001	0.0031	0.0032
Cumene						0.0000		0.0000
Ethylbenzene						0.00001		0.0000
Carbon disulfide						0.00000		0.00000
Trimethylbenzene							0.0033	0.00330
Cyclohexane							0.00002	0.00002
Hydrogen Sulfide			1.0696					1.06960
Totals	0.0395	12.921	1.909	0.037	2.503	0.015	0.0158	

Total Potential to Emit 17.44





Section 3.5: Greenhouse Gas Emissions Summary (ton/yr)

Complete the following table so that all emission points are accounted for. Use multiple Section 3.1 4 forms, if needed, so all emission points are included. List each emission point that will emit any of the pollutants listed in the Emission Point ID# column. For each emission point, indicate the quantity, in tons per year, of criteria greenhouse gas pollutants that will be emitted. Totals should be the sum of the entire column. If you have any questions, please contact the Nebraska Department of Environmental Quality via the Air Quality Permitting Hotline at (877) 834-0474 or the Air Quality Permitting Section at (402) 471-2189.

Emission Point ID#	CO ₂ (ton/yr)	CH ₄ (ton/yr)	N ₂ O (ton/yr)	HFC (ton/yr)	PFC (ton/yr)	SF ₆ (ton/yr)
EP – 4/EP - 9	60,941.47	2.31	0.40	-	-	-
EP – 12	2,413.44	0.15	0.03	-	-	-
EP – 15	2,337.78	0.04	0.004	-	-	-
TOTAL	65,692.69	2.50	0.44	-	-	-



Nebraska
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Air Quality Construction Permit Application Form 3.0: Emissions Summary

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 3.6: Carbon Dioxide Equivalent Summary (ton/year)

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or print using blue or black ink.

Complete the following table so that all carbon dioxide equivalent (CO₂e) emissions are accounted for. For each greenhouse gas pollutant, enter the quantity, in tons per year that will be emitted in the respective column. These emission totals can be obtained from Section 3.5. For each greenhouse gas pollutant multiply the emission rate by the CO₂e emission factor to get the CO₂e emission rate. Once CO₂e emission rates have been determined for all greenhouse gas pollutants, sum all CO₂e emission rates and enter the quantity in the bottom box of the table. If you have any questions, please contact the Nebraska Department of Environmental Quality via the Air Quality Permitting Hotline at (877) 834-0474, or the Air Quality Permitting Section at (402) 471-2189.

Please check ☐ if a separate summary document is used as a replacement for this Form. Identify separate summary document with the title of this Form and attach. This can be a combined summary with Sections 3.1, 3.2, 3.3, 3.4, and 3.5.

Greenhouse Gas Pollutant	Emission Rate (From Form 3.4)	CO ₂ e Emission Factor	CO ₂ e Emission Rate
	(tons/year)	(tons CO ₂ e/ton pollutant)	(tons/year)
CO ₂	65,692.69	1	65,692.69
CH ₄	2.50	21	52.46
N ₂ O	0.44	310	134.89
HFC		11,700	
PFC		17,300	
SF ₆		23,900	
Total CO ₂ e emissions			65,877.17



Air Quality Construction Permit Application Form 4.0: Applicable Requirements

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 4.1: NSPS Applicable Requirements

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or use black ink.

For each applicable New Source Performance Standard (NSPS) that a unit(s) located at your facility is/will be subject to, identify the applicable requirement (ex. NSPS, Subpart Dc), the requirement citation (e.g. T129, Chapter 18, Section 001.52 and/or 40 CFR 60.40c), and the unit(s) subject to the applicable requirement (e.g. EU31-Boiler #3). Only units being addressed in this application need to be included on this page. For information on NSPS, visit http://www.epa.gov/region07/programs/artd/air/nsps/nsps_standard_contacts.htm or contact NDEQ NSPS Coordinator at (402) 471-2189.

Applicable Requirement	Requirement Citation	Units Subject to Applicable Requirement (Emission Unit ID# and Description)
NSPS, Subpart A – General Provisions	Chapter 18, Section 001.01, 40 CFR 60.1	EP-4: Boilers EP-15: Auxiliary Boiler EP-7: Liquid Storage Tanks
NSPS, Subpart Dc	Chapter 18, Section 001.62 40 CFR 60.40c	EP-4: Boilers EP-15: Auxiliary Boiler
NSPS, Subpart Kb	Chapter 18, Section 001.62 40 CFR 60.11b	EP-7: Liquid Storage Tanks
NSPS, Subpart VV	Chapter 18, 40 CFR 60	EP-5: Fugitive Components



Nebraska
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Air Quality Construction Permit Application Form 4.0: Applicable Requirements

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 4.1: NSPS Applicable Requirements (continued)

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or use black ink.

For each New Source Performance Standard (NSPS) that may appear to apply to a unit(s) located at your facility but actually does not apply, identify the applicable requirement (e.g. NSPS, Subpart IIII), the requirement citation (ex. T129, Chapter 18, Section 001.76 and/or 40 CFR 60.4200), and the unit(s) that appear to apply to the subpart (ex. EU20-Emergency Generator) and the reason why the subpart does not apply (e.g. displacement is greater than 30 liters per cylinder). Only units being addressed in this application need to be included on this page.

Applicable Requirement	Requirement Citation	Unit ID# and Description	Reason(s) Why Requirement Does Not Apply



Nebraska
DEQ

Air Quality Construction Permit Application Form 4.0: Applicable Requirements

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 4.2: NESHAP Applicable Requirements

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or use black ink.

For each applicable National Emission Standard for Hazardous Air Pollutants (NESHAP) that a unit(s) or process located at your facility is/will be subject to, identify the applicable requirement (e.g. NESHAP, Subpart ZZZZ), the requirement citation (e.g. T129, Chapter 28, Section 001.88 and/or 40 CFR 63.6580), and the unit(s), process, or emission point(s) that is subject to the applicable requirement (e.g. EU20, Emergency Generator or EP-32, Fermentation Scrubber Vent). If no units or processes at your facility are subject to any NESHAP requirements (including any area source NESHAPs), this section does not need to be completed and/or submitted. For information about NESHAPs, view <http://www.epa.gov/ttn/atw/mactfnlalph.html> or contact NDEQ MACT Coordinator at 402-471-2189 for assistance.

NOTE: Completing this section does not fulfill the initial notification requirements under the NESHAP general provisions, please contact the NDEQ MACT Coordinator for initial notification requirements and forms.

Applicable Requirement	Requirement Citation	Units Subject to Applicable Requirement (Emission Unit ID# and Description)
N/A		



Nebraska
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Air Quality Construction Permit Application Form 4.0: Applicable Requirements

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 4.2: NESHAP Applicable Requirements (continued)

IMPORTANT: Do NOT use pencil to fill out this application. Please type responses or use black ink.

For each National Emission Standard for Hazardous Air Pollutants (NESHAP) that may appear to apply to a unit(s) or process located at your facility but actually does not apply, identify the applicable requirement (e.g. NESHAP, Subpart ZZZZ), the requirement citation (e.g. T129, Chapter 28, Section 001.88 and/or 40 CFR 63.), and the unit(s), process, or emission point(s) that is subject to the applicable requirement (e.g. EU20, Emergency Generator or EP-32, Fermentation Scrubber Vent), and the reason why the subpart does not apply.

Applicable Requirement	Requirement Citation	Unit ID# and Description	Reason(s) Why Requirement Does Not Apply
N/A			



Nebraska
DEQ

Air Quality Permitting Application Form 5.0: Facility Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 5.3: Ethanol Production Facility Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Indicate the quantity of the following products that have been and/or will be produced:

Product	Current Amount	Maximum Proposed Amount
Denatured Ethanol	24,100,000 gallons/year	24,100,000 gallons/year
Anhydrous Ethanol	- gallons/year	- gallons/year
Wet Distilled Grain Solubles (WDGS) - % H ₂ O	200,325 tons/year	200,325 tons/year
Modified WDGS (MWDGS) - % H ₂ O	- tons/year	- tons/year
Dry Distilled Grain Solubles (DDGS) - % H ₂ O	- tons/year	- tons/year
Other: _____		
Other: _____		

2) Milling Type: ☐ Wet Milling (SIC 2046)
☒ **Dry Milling (SIC 2869)**
☐ Other: _____

3) Fermentation Type: ☒ **Batch Fermentation**
☐ Continuous Fermentation
☐ Other: _____

4) Type(s) of material used for ethanol production: ☒ **Corn** ☒ **Milo** ☐ Cellulose ☒ **Other Depending on availability**

5) Maximum grain/material throughput required for maximum ethanol production: **237,965** tons/year

Grain Receiving Information

6) Indicate the number of the following units that have been and/or will be constructed:

Unit Type	Current Number	Proposed Total Number
Truck Dump Pit	2	Same
Rail Dump Pit	-	-

7) For each Dump Pit complete the following:

Unit Name	Select the most appropriate description(s):
Grain Unloading Baghouse	<input type="checkbox"/> Enclosed <input checked="" type="checkbox"/> Partially Enclosed <input checked="" type="checkbox"/> Choke-flow <input checked="" type="checkbox"/> Other Baghouse
	<input type="checkbox"/> Enclosed <input type="checkbox"/> Partially Enclosed <input type="checkbox"/> Choke-flow <input type="checkbox"/> Other _____
	<input type="checkbox"/> Enclosed <input type="checkbox"/> Partially Enclosed <input type="checkbox"/> Choke-flow <input type="checkbox"/> Other _____

If there are/will be more than five dump pits located at the facility, attach additional information so that each unit is described.

8) Indicate the % of grain that currently is and/or will be received via the following:

Received By:	Percentage	Received By:	Percentage
Straight Truck	c: % / a: %	Rail	c: % / a: %
Hopper Bottom Truck	c: 100 % / a: 100 %	Other: _____	c: % / a: %



Nebraska
DEQ

Air Quality Permitting Application Form 5.0: Facility Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 5.3: Ethanol Production Facility Information (cont.)

9) Permanent Storage Information

Complete the following information for each permanent storage unit at the source:

EU ID#	Description	Capacity (bu)	Height (m)	Diameter (m)	New Unit
-	Storage Silo	200,000 bu			<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If there are more than four permanent storage units (i.e. silos and bins), attach additional information so that each unit is described.

If an open storage pile(s) will be/are used for grain storage, complete Section 6.11 for each storage pile.

10) Grain Scalping and Hammermilling Operations ☐ N/A

Complete the following information for each scalper and hammermill at the source:

EU ID#	EU Name	Unit Type	Surge Bin Associated with Unit?	Size of Surge Bin (bu)	New Unit
EP - 2	Hammermill Baghouse	<input type="checkbox"/> Scalper <input checked="" type="checkbox"/> Hammermill	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/>
EP - 3	Scalper/Day Tank Baghouse	<input checked="" type="checkbox"/> Scalper <input type="checkbox"/> Hammermill	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/>
		<input type="checkbox"/> Scalper <input type="checkbox"/> Hammermill	<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/>

If there are more than three scalpors, hammermills, or associated surge bins, attach additional information so that each unit is described.

Grain and By-Product Drying Operations ☒ N/A

11) Indicate the number of grain dryers that currently exist and will exist at the source: c: / a: ☐ N/A

12) Indicate the number of DDGS dryers that currently exist and will exist at the source: c: / a: ☐ N/A

13) For each Dryer complete the following:

EU ID#	EU Name	Drying Capacity (tons/hour)	Select the most appropriate description(s):	New Unit
			<input type="checkbox"/> Column Dryer <input type="checkbox"/> Self Cleaning Screens (<50 mesh) <input type="checkbox"/> Rack Dryer <input type="checkbox"/> Other _____	<input type="checkbox"/>
			<input type="checkbox"/> Column Dryer <input type="checkbox"/> Self Cleaning Screens (<50 mesh) <input type="checkbox"/> Rack Dryer <input type="checkbox"/> Other _____	<input type="checkbox"/>

If there are more than two dryers, attach additional information so that each unit is described.

Be sure to complete Section 6.1 for each dryer that combusts fuel.

14) New Source Performance Standard Applicability

The grain handling operation located at this Ethanol Manufacturing facility is subject to:
If unknown, Contact the Department

☐ NSPS, Subpart DD
☒ None

☐ Other _____



Nebraska
DEQ

Air Quality Permitting Application Form 5.0: Facility Information

FACILITY NAME: <u>AltEn, LLC</u>	DATE: <u>January 2013</u>
NDEQ Facility ID#: <u>84069</u>	

Section 5.3: Ethanol Production Facility Information (cont.)

Fermentation Operations				
15) Indicate the number of fermenters that currently exist and will exist at the source: c: <u>4</u> / a: <u>4</u> <input type="checkbox"/> N/A				
16) Indicate the number of beer wells that currently exist and will exist at the source: c: <u>1</u> / a: <u>1</u> <input type="checkbox"/> N/A				
17) Solid By-Product Shipping Information				
Indicate the % of WDGS that currently is and will be shipped via the following:				
Shipped By:	Percentage	Shipped By:	Percentage	
Straight Truck	c: % / a: %	Rail	c: % / a: %	
Hopper Bottom Truck	c: % / a: %	Other: <u>Front End Loader</u>	c: <u>100</u> % / a: <u>100</u> %	
Indicate the % of _____ that currently is and is anticipated to be shipped via the following:				
Shipped By:	Percentage	Shipped By:	Percentage	
Straight Truck	c: % / a: %	Rail	c: % / a: %	
Hopper Bottom Truck	c: % / a: %	Other: _____	c: % / a: %	
If more than two solid by-products will be produced, attach additional information so that each by-product is described.				
Liquid Loadout Information				
18) Indicate the amounts of the following products that have been and will be loaded out :				
Product	Method	million gallons / year	Method	million gallons / year
Anhydrous Ethanol	Truck	c: - / a: -	Rail	c: - / a: -
Denaturant	Truck	c: - / a: <u>0.723</u>	Rail	c: - / a: -
Denatured Ethanol	Truck	c: <u>24.1</u> / a: <u>24.1</u>	Rail	c: - / a: -
E85	Truck	c: / a:	Rail	c: - / a: -
Other: _____	Truck	c: / a:	Rail	c: - / a: -
19) Requested operational limitation(s) for ethanol liquid loadout (please be specific and include units): <u>N/A</u>				
20) The following Denaturant will be used: <input checked="" type="checkbox"/> Natural Gasoline <input type="checkbox"/> Unleaded Gasoline <input type="checkbox"/> Other _____				
21) Type of liquid loading into Trucks: <input type="checkbox"/> None <input checked="" type="checkbox"/> Submerged Loading <input type="checkbox"/> Bottom-Fill Loading <input type="checkbox"/> Other _____				
22) Type of liquid loading into Railcars: <input type="checkbox"/> None <input type="checkbox"/> Submerged Loading <input type="checkbox"/> Bottom-Fill Loading <input type="checkbox"/> Other <u>N/A</u>				



Nebraska
DEQ

Air Quality Permitting Application Form 5.0: Facility Information

FACILITY NAME: <u>AltEn, LLC</u>	DATE: <u>January 2013</u>
NDEQ Facility ID#: <u>84069</u>	

Section 5.3: Ethanol Production Facility Information (cont.)

Vapor Recovery System Information		
23) Will a vapor recovery system with flare be installed on the liquid loadout operations? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
24) The system will recover vapors from: <input checked="" type="checkbox"/> Truck loadout <input type="checkbox"/> Rail loadout <input type="checkbox"/> Both <input type="checkbox"/> Other _____		
25) Capture and Control Efficiencies of Vapor Recovery System		
	Truck Loadout	Rail Loadout
(A) Capture Efficiency	100%	
(B) VOC Control Efficiency	86%	
(A x B) Overall Control Efficiency		
For each combustion flare at the facility, also complete Section 7.1 for combustion flares.		
26) Potential to Emit Calculations Attached? <input checked="" type="checkbox"/> YES		
27) Additional Information Attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

Actual Operating Rates		
28) Indicate the quantity of the following products that have been produced or received:		
Product	Maximum Annual Amount in the Previous Five Years	Amount Last Year
Denatured Ethanol	gallons/year	gallons/year
Anhydrous Ethanol	gallons/year	gallons/year
Wet Distilled Grain Solubles (WDGS) - % H ₂ O	tons/year	tons/year
Modified WDGS (MWDGS) - % H ₂ O	tons/year	tons/year
Dry Distilled Grain Solubles (DDGS) - % H ₂ O	tons/year	tons/year
Grain	tons/year	tons/year
Denaturant - _____	gallons/year	gallons/year
Other: _____		
Other: _____		
Other: _____		
29) Actual Emission Calculations Attached? <input type="checkbox"/> YES		
30) Additional Information Attached? <input type="checkbox"/> YES <input type="checkbox"/> NO		



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 4

Section 6.1: External Combustion Unit

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Unit ID#: EP - 4a, EP-4b	2) Installation Date: <input type="checkbox"/> New
3) Unit Type: <input checked="" type="checkbox"/> Boiler <input type="checkbox"/> Dryer <input type="checkbox"/> Other _____	4) Maximum Rated Capacity: 66 MMBtu/hr (Combined)
5) Gross Power Output: _____ MW <input type="checkbox"/> N/A	Net Power Output: _____ MW <input type="checkbox"/> N/A

6) Stack Information - Each Boiler ☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
79 ft	4.17 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	m/s	K

7) Fuel Information

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Natural Gas	66.0 MMBtu/hr (Combined)	1,020 Btu/scf	% Sulfur: N/A % Ash:	578,160 MMBtu/yr <input checked="" type="checkbox"/> N/A
Biogas	66.0 MMBtu/hr (Combined)	680 Btu/scf	% Sulfur: N/A % Ash:	578,160 MMBtu/yr <input checked="" type="checkbox"/> N/A
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A

If the external combustion unit combusts more than three types of fuel, attach additional pages so that all fuel types are listed.

8) New Source Performance Standard Applicability

This external combustion unit is subject to:
If unknown contact the department for additional information

<input type="checkbox"/> NSPS, Subpart D	<input type="checkbox"/> NSPS, Subpart Db	<input type="checkbox"/> Other _____
<input type="checkbox"/> NSPS, Subpart Da	<input checked="" type="checkbox"/> NSPS Subpart Dc	<input type="checkbox"/> None



Nebraska
DEQ

Air Quality Permitting Application
Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 4

Section 6.1: External Combustion Unit (continued)

9) Air Pollution Control Equipment

Is there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date
Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If there are two or more pieces of control equipment identify the correct configuration: ☐ Series ☐ Parallel ☐ Other: _____

10) Potential to Emit Calculations Attached? ☒ YES

11) Additional Information Attached? ☐ YES ☒ NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

Operating Information

12) Indicate the quantity of each fuel type that has been combusted in the external combustion unit:

Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year	
	Number	Units	Number	Units

13) If this is an electric generating unit, provide the gross and net power generation from this unit for the past five years:

Year					
Gross MW Produced					
Net MW Produced					

14) Actual Emission Calculations Attached? ☐ YES

15) Additional Information Attached? ☐ YES ☐ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 15

Section 6.1: External Combustion Unit

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Unit ID#: EP - 15	2) Installation Date: <input type="checkbox"/> New
3) Unit Type: <input checked="" type="checkbox"/> Boiler <input type="checkbox"/> Dryer <input type="checkbox"/> Other _____	4) Maximum Rated Capacity: 20 MMBtu/hr
5) Gross Power Output: _____ MW <input type="checkbox"/> N/A	Net Power Output: _____ MW <input type="checkbox"/> N/A

6) Stack Information ☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
17.375 ft	2.156 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	m/s	K

7) Fuel Information

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Natural Gas	20 MMBtu/hr	1,020 Btu/scf	% Sulfur: N/A % Ash:	2,000 hours/year <input type="checkbox"/> N/A
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A

If the external combustion unit combusts more than three types of fuel, attach additional pages so that all fuel types are listed.

8) New Source Performance Standard Applicability

This external combustion unit is subject to:
If unknown contact the department for additional information

<input type="checkbox"/> NSPS, Subpart D	<input type="checkbox"/> NSPS, Subpart Db	<input type="checkbox"/> Other _____
<input type="checkbox"/> NSPS, Subpart Da	<input checked="" type="checkbox"/> NSPS Subpart Dc	<input type="checkbox"/> None



Nebraska
DEQ

**Air Quality Permitting Application
Form 6.0: Emission Point Information**

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP-15

Section 6.1: External Combustion Unit (continued)

9) Air Pollution Control Equipment

Is there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date
Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If there are two or more pieces of control equipment identify the correct configuration: ☐ Series ☐ Parallel ☐ Other: _____

10) Potential to Emit Calculations Attached? ☒ YES

11) Additional Information Attached? ☐ YES ☒ NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

Operating Information

12) Indicate the quantity of each fuel type that has been combusted in the external combustion unit:

Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year	
	Number	Units	Number	Units

13) If this is an electric generating unit, provide the gross and net power generation from this unit for the past five years:

Year					
Gross MW Produced					
Net MW Produced					

14) Actual Emission Calculations Attached? ☐ YES

15) Additional Information Attached? ☐ YES ☐ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 1

Section 6.5: Controlled Emission Point (without combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 1

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Grain Unloading Baghouse

Depending on the type of control device, you may need to complete a section in Form 7.0

4) Unit Information

List all the emission units that are controlled by the control equipment identified above:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Dump Pit	Grain Receiving Station	2,725 bu/hr		<input type="checkbox"/>
-	Storage Bins	Grain Storage	200,000 bu		<input type="checkbox"/>
	Grain Receiving	Elevator Leg			<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than eight units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types could include: Dryer, Distillation Vent, Fermenter, Paint Booth, Dump Pit, Conveyor, Loadout Spout, etc.

5) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
18.96 ft	2.5 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	9.314 m/s	K

6) Control Information

Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency
PM/PM10/PM2.5	~99%		

If the air pollution control device(s) is a baghouse, complete the following: ☐ N/A

Air Flow Rate (dscf/min)	Grain Loading (grains/dscf)
9,000	0.008



Nebraska
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Air Quality Permitting Application
Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 1

Section 6.5: Controlled Emission Point (without combustion)

7) Controlled Unit Fuel Information

Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? ☒ No ☐ Yes

If Yes, Complete the following information for each emission unit being controlled that combusts fuel:

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: _____ % Ash: _____	<input type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: _____ % Ash: _____	<input type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are addressed.

If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.

8) Potential to Emit Calculations Attached? ☒ YES

9) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

10) Additional Information Attached? ☐ YES ☒ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 2

Section 6.5: Controlled Emission Point (without combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do **NOT** use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 2

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Scalper/Day Tank Baghouse

Depending on the type of control device, you may need to complete a section in Form 7.0

4) Unit Information

List all the emission units that are controlled by the control equipment identified above:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
	Scalper	Scalper			<input type="checkbox"/>
	Tank	Day Tank			<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than eight units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types could include: Dryer, Distillation Vent, Fermenter, Paint Booth, Dump Pit, Conveyor, Loadout Spout, etc.

5) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
40 ft	0.58 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	96.136 m/s	K

6) Control Information

Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency
PM/PM10/PM2.5	~99%		

If the air pollution control device(s) is a baghouse, complete the following: ☐ N/A

Air Flow Rate (dscf/min)	Grain Loading (grains/dscf)
~5,000	0.008



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 2

Section 6.5: Controlled Emission Point (without combustion)

7) Controlled Unit Fuel Information

Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? ☒ No ☐ Yes

If Yes, Complete the following information for each emission unit being controlled that combusts fuel:

Unit ID#: Maximum Rated Capacity of Unit: MMBtu/hr

Unit Name/Description:

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units:)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

Unit ID#: Maximum Rated Capacity of Unit: MMBtu/hr

Unit Name/Description:

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units:)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are addressed.

If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.

8) Potential to Emit Calculations Attached? ☒ YES

9) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

10) Additional Information Attached? ☐ YES ☒ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 3

Section 6.5: Controlled Emission Point (without combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 3

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Hammermill Baghouse

Depending on the type of control device, you may need to complete a section in Form 7.0

4) Unit Information

List all the emission units that are controlled by the control equipment identified above:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Hammermill	Hammermill	-		<input type="checkbox"/>
-	Conveyor	Conveyor	-		<input type="checkbox"/>
			-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than eight units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types could include: Dryer, Distillation Vent, Fermenter, Paint Booth, Dump Pit, Conveyor, Loadout Spout, etc.

5) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
36 ft	1 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	21.34 m/s	K

6) Control Information

Pollutant(s) Controlled	% Control Efficiency ~	Pollutant(s) Controlled	% Control Efficiency
PM/PM10/PM2.5	~99%		

If the air pollution control device(s) is a baghouse, complete the following: ☐ N/A

Air Flow Rate (dscf/min)	Grain Loading (grains/dscf)
3,300	0.01



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 3

Section 6.5: Controlled Emission Point (without combustion)

7) Controlled Unit Fuel Information

Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? ☒ No ☐ Yes

If Yes, Complete the following information for each emission unit being controlled that combusts fuel:

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: _____ % Ash: _____	<input type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: _____ % Ash: _____	<input type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are addressed.

If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.

8) Potential to Emit Calculations Attached? ☒ YES

9) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

10) Additional Information Attached? ☐ YES ☒ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 6

Section 6.5: Controlled Emission Point (without combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do **NOT** use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 6

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Fermentation & Distillation

Depending on the type of control device, you may need to complete a section in Form 7.0

4) Unit Information

List all the emission units that are controlled by the control equipment identified above:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Fermenters	Fermenters (4)	-		<input type="checkbox"/>
-	Beer Well	Beer Well	-		<input type="checkbox"/>
-	Tanks	1 Mash Tank, 1 Liquefaction Tank, 1 Yeast Propagation Tank, 2 Stillage Tanks	-		<input type="checkbox"/>
-	Beer Stripper	1 Beer Stripper	-		<input type="checkbox"/>
-	Distillation Column	1 Distillation Column	-		<input type="checkbox"/>
-	Molecular Sieves	2 molecular Seives	-		<input type="checkbox"/>

If more than eight units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types could include: Dryer, Distillation Vent, Fermenter, Paint Booth, Dump Pit, Conveyor, Loadout Spout, etc.

5) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
63 ft	1.67 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain	m/s	K

6) Control Information

Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency
N/A			

If the air pollution control device(s) is a baghouse, complete the following: ☒ N/A

Air Flow Rate (dscf/min)	Grain Loading (grains/dscf)



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 6

Section 6.5: Controlled Emission Point (without combustion)

7) Controlled Unit Fuel Information

Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? ☒ No ☐ Yes

If Yes, Complete the following information for each emission unit being controlled that combusts fuel:

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

Unit ID#: _____ Maximum Rated Capacity of Unit: _____ MMBtu/hr

Unit Name/Description: _____

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are addressed.

If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.

8) Potential to Emit Calculations Attached? ☒ YES

9) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

10) Additional Information Attached? ☐ YES ☒ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 6.6: Controlled Emission Point (with combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 9

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Digester Flare

4) Maximum Rated Capacity of CE:

54 MMBtu/hr

5) If this control equipment is a thermal oxidation system, indicate the type:

☐ Regenerative ☐ Recuperative ☐ Catalytic Oxidizer ☒ N/A ☐ Other _____

pag

7) Emission Unit Information

List all the emission units that are controlled by the control equipment that combusts fuel:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
	Digester System	Digester System	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than six units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types may include: Dryer, Distillation Vent, Fermenter, Paint Booth, etc.

8) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
<u>33</u> ft	<u>10.42</u> ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain cap	m/s	K

9) Control Information

Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency

If additional pollutants are being controlled, attach additional information.



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 6.6: Controlled Emission Point (with combustion)

10) Control Equipment Fuel Information

Complete the following information for each type of fuel combusted in the piece of control equipment:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Biogas	54 MMBtu/hr	630 Btu/scf	% Sulfur: N/A % Ash:	<input checked="" type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the control equipment combusts more than two types of fuel, attach additional pages so that all fuel types are listed.

11) Control Equipment New Source Performance Standard Applicability

For each piece of control equipment that combusts fuel, indicate whether the following NSPS' apply to each unit. If unknown, complete and submit the External Combustion Unit NSPS Applicability Determination for each unit.

CE ID#	CE Name/Description	New Source Performance Standards
EP - 9	Digester Flare	<input type="checkbox"/> NSPS, Subpart D <input type="checkbox"/> NSPS Subpart Dc <input type="checkbox"/> NSPS, Subpart Da <input type="checkbox"/> Other: _____ <input type="checkbox"/> NSPS, Subpart Db <input checked="" type="checkbox"/> None



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 6.6: Controlled Emission Point (with combustion)

12) Controlled Unit Fuel Information

Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? ☒ No ☐ Yes

If Yes, Complete the following information for each emission unit being controlled that combusts fuel:

Unit ID#:	Maximum Rated Capacity of Unit:	MMBtu/hr
-----------	---------------------------------	----------

Unit Name/Description:

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

Unit ID#:	Maximum Rated Capacity of Unit:	MMBtu/hr
-----------	---------------------------------	----------

Unit Name/Description:

Complete the following information for each type of fuel combusted in the emission unit:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.

If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.

13) Potential to Emit Calculations Attached? ☒ YES

14) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

15) Additional Information Attached? ☐ YES ☒ NO



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 6.6: Controlled Emission Point (with combustion)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment (CE) ID#: EP - 12

2) CE Installation Date:

☐ New Unit

3) CE Name/Description: Loadout Vapor Combustion Unit

4) Maximum Rated Capacity of CE:

4.8 MMBtu/hr

5) If this control equipment is a thermal oxidation system, indicate the type:

☐ Regenerative ☐ Recuperative ☐ Catalytic Oxidizer ☒ N/A ☐ Other _____

6) If this control equipment is a regenerative thermal oxidation (RTO) system, indicate the type of regeneration:

☐ Online ☐ Offline ☒ N/A ☐ Other _____

7) Emission Unit Information

List all the emission units that are controlled by the control equipment that combusts fuel:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Loadout	Truck Loadout	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than six units' emissions are controlled by this piece of control equipment, attach an additional page so that all emission units are accounted for.

¹Unit Types may include: Dryer, Distillation Vent, Fermenter, Paint Booth, etc.

8) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
20 ft	1 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain cap	m/s	K

9) Control Information

Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency

If additional pollutants are being controlled, attach additional information.



Nebraska
DEQ

Air Quality Permitting Application
Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 6.6: Controlled Emission Point (with combustion)

10) Control Equipment Fuel Information

Complete the following information for each type of fuel combusted in the piece of control equipment:

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Waste Gas	4.8 MMBtu/hr	850 Btu/scf	% Sulfur: N/A	<input checked="" type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	

OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):

Year					
Throughput (Units: _____)					

If the control equipment combusts more than two types of fuel, attach additional pages so that all fuel types are listed.

11) Control Equipment New Source Performance Standard Applicability

For each piece of control equipment that combusts fuel, indicate whether the following NSPS' apply to each unit. If unknown, complete and submit the External Combustion Unit NSPS Applicability Determination for each unit.

CE ID#	CE Name/Description	New Source Performance Standards	
EP - 12	Loadout Vapor Combustion Unit	<input type="checkbox"/> NSPS, Subpart D	<input type="checkbox"/> NSPS Subpart Dc
		<input type="checkbox"/> NSPS, Subpart Da	<input type="checkbox"/> Other _____
		<input type="checkbox"/> NSPS, Subpart Db	<input checked="" type="checkbox"/> None



Nebraska
DEQ

Air Quality Permitting Application Form 6.0: Emission Points

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 6.6: Controlled Emission Point (with combustion)

12) Controlled Unit Fuel Information					
Will any of the units being controlled by the CE combust fuel (boiler, dryer, etc)? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes					
If Yes, Complete the following information for each emission unit being controlled that combusts fuel:					
Unit ID#: <u>EP - 12</u>		Maximum Rated Capacity of Unit: <u>4.8</u> MMBtu/hr			
Unit Name/Description: <u>Vapor Combustion Unit</u>					
Complete the following information for each type of fuel combusted in the emission unit:					
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)	
<u>Waste Gas</u>	<u>4.8 MMBtu/hr</u>	<u>850 Btu/scf</u>	% Sulfur: <u>N/A</u> % Ash: <u></u>	<input checked="" type="checkbox"/> N/A	
OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):					
Year					
Throughput (Units: <u></u>)					
If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.					
Unit ID#:		Maximum Rated Capacity of Unit: MMBtu/hr			
Unit Name/Description:					
Complete the following information for each type of fuel combusted in the emission unit:					
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)	
			% Sulfur: <u></u> % Ash: <u></u>	<input type="checkbox"/> N/A	
OP Application ONLY: Provide the actual fuel usage for this fuel type for the past five years (past year if new source):					
Year					
Throughput (Units: <u></u>)					
If the emission unit combusts more than one type of fuel, attach additional pages so that all fuel types are listed.					
If more than two of the emission units being controlled by the CE combusts fuel, attach additional pages so that all combustion units and fuel types are listed.					
13) Potential to Emit Calculations Attached? <input checked="" type="checkbox"/> YES					
14) OP Application ONLY: Actual Emission Calculations Attached? <input type="checkbox"/> YES					
15) Additional Information Attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					



Air Quality Permitting Application
Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Section 6.7.1: Tank Emissions – Tank Summary

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Summary

1) Emission Point ID #	2) Emission Unit ID #	3) Tank Contents	4) Maximum Capacity (gallons)	5) Installation Date	New Unit
TK – 801A	TK – 801A	Anhydrous Ethanol	22,600		<input type="checkbox"/>
TK – 801B	TK – 801B	Anhydrous Ethanol	22,600		<input type="checkbox"/>
TK – 803	TK – 803	190 Proof Ethanol	22,600		<input type="checkbox"/>
TK – 810	TK – 810	Denatured Ethanol	535,830		<input type="checkbox"/>
TK – 808	TK – 808	Denaturant	22,600		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If there are more than ten storage tanks at this facility, attach additional information so that each tank is contained in the summary table.



Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC**DATE:** January 2013**NDEQ Facility ID#:** 84069**Emission Point Identification#(s):** TK - 801A

Note: This page must be completed for each tank currently used in the storage of an organic liquid or material containing hazardous air pollutants. A single section may be completed for several tanks ONLY if the tanks are identical in size and contents. In addition to completing this section, the most recent TANKS Program must be completed for each storage tank. The "Detailed Format" output should be printed out and attached to this form. You can obtain the TANKS program at <http://www.epa.gov/ttn/chief/software/tanks/>. If you are unable to complete this program, contact the Department for assistance.

Section 6.7.2: Tank Emissions - Tank Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): TK - 801A		2) Installation Date: <input type="checkbox"/> New Unit	
3) Tank Name/Description: Anhydrous Ethanol Storage Tank			
4) Identify the material(s) contained in this tank: Anhydrous Ethanol			
5) TANKS program output attached? <input checked="" type="checkbox"/> YES		6) TANKS Program Version: 4.09d <input type="checkbox"/> N/A	
7) Maximum Capacity: 22,600 Gallons		8) Max. Working Volume: 22,600 Gallons	
9) Tank Dimensions: Height 16 Feet		Length - Feet	
Diameter 15.5 Feet			
10) Tank Orientation: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Horizontal		Tank Location: <input checked="" type="checkbox"/> Above Ground <input type="checkbox"/> Underground	
11) Type of Tank: <input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating Roof <input type="checkbox"/> Internal Floating Roof <input type="checkbox"/> Other: _____			
12) Type of Primary Seal (if using a floating roof): <input type="checkbox"/> Mechanical Shoe <input type="checkbox"/> Liquid Mounted <input type="checkbox"/> Vapor Mounted <input type="checkbox"/> N/A			

13) Air Pollution Control Equipment

Is there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If additional pollutants are being controlled, attach additional information.

14) New Source Performance Standard Applicability

This tank is subject to:

If unknown contact the department for additional information.

☐ NSPS, Subpart K
☐ NSPS, Subpart Ka

☒ NSPS, Subpart Kb
☐ Other: _____

15) Additional Information Attached? ☐ YES ☒ NO



Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#(s): TK-801A

Section 6.7.3: Tank Emissions – Product Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): TK-801A

2) Is this tank(s) restricted to storing only one product? ☒ YES ☐ NO

If this tank stores more than one product, how many different products are stored in this tank?
(Note: The Product Specifications section (below) must be filled out for each product stored)

3) Product Specifications

Primary Product Name: Anhydrous Ethanol

(A) Total VOC Emissions: 1,398.50

lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Acetaldehyde	0.0002	0.028	0.00014
Methanol	0.0002	0.028	0.00014
Acrolein	0.0001	0.014	0.00007
Formaldehyde	0.0001	0.014	0.00007
Total HAP Emissions from Primary Product		0.084	0.00042

3) Product Specifications

Additional Product Name:

(A) Total VOC Emissions:

lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Total HAP Emissions from Additional Product			

Note: If this tank(s) contains more than two different products, please attach additional pages.

FACILITY NAME: AltEn, LLCDATE: January 2013NDEQ Facility ID#: 84069Emission Point Identification#(s): TK - 801B

Note: This page must be completed for each tank currently used in the storage of an organic liquid or material containing hazardous air pollutants. A single section may be completed for several tanks ONLY if the tanks are identical in size and contents. In addition to completing this section, the most recent TANKS Program must be completed for each storage tank. The "Detailed Format" output should be printed out and attached to this form. You can obtain the TANKS program at <http://www.epa.gov/ttn/chief/software/tanks/>. If you are unable to complete this program, contact the Department for assistance.

Section 6.7.2: Tank Emissions – Tank Information**IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information1) Emission Unit ID#(s): TK - 801B 2) Installation Date: _____ ☐ New Unit3) Tank Name/Description: Anhydrous Ethanol Storage Tank4) Identify the material(s) contained in this tank: Anhydrous Ethanol5) TANKS program output attached? ☒ YES6) TANKS Program Version: 4.09d ☐ N/A7) Maximum Capacity: 22,600 Gallons 8) Max. Working Volume: 22,600 Gallons9) Tank Dimensions: Height 16 Feet Length - _____ Feet Diameter 15.5 Feet10) Tank Orientation: ☒ Vertical
☐ HorizontalTank Location: ☒ Above Ground
☐ Underground11) Type of Tank: ☒ Fixed Roof ☐ External Floating Roof ☐ Internal Floating Roof ☐ Other: _____12) Type of Primary Seal (if using a floating roof): ☐ Mechanical Shoe ☐ Liquid Mounted ☐ Vapor Mounted ☐ N/A**13) Air Pollution Control Equipment**Is there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If additional pollutants are being controlled, attach additional information.

14) New Source Performance Standard Applicability

This tank is subject to:

If unknown contact the department for additional information.

☐ NSPS, Subpart K
☐ NSPS, Subpart Ka☒ NSPS, Subpart Kb
☐ Other: _____**15) Additional Information Attached?** ☐ YES ☒ NO

FACILITY NAME: AltEn, LLCDATE: January 2013NDEQ Facility ID#: 84069Emission Point Identification#(s): TK - 801B**Section 6.7.3: Tank Emissions – Product Information****IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information1) Emission Unit ID#(s): TK - 801B2) Is this tank(s) restricted to storing only one product? ☒ YES ☐ NO

If this tank stores more than one product, how many different products are stored in this tank?

(Note: The Product Specifications section (below) must be filled out for each product stored)

3) Product SpecificationsPrimary Product Name: Anhydrous Ethanol(A) Total VOC Emissions: 1,398.50 lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
<u>Acetaldehyde</u>	<u>0.0002</u>	<u>0.028</u>	<u>0.00014</u>
<u>Methanol</u>	<u>0.0002</u>	<u>0.028</u>	<u>0.00014</u>
<u>Acrolein</u>	<u>0.0001</u>	<u>0.014</u>	<u>0.00007</u>
<u>Formaldehyde</u>	<u>0.0001</u>	<u>0.014</u>	<u>0.00007</u>
Total HAP Emissions from Primary Product		<u>0.084</u>	<u>0.00042</u>

3) Product Specifications

Additional Product Name:

(A) Total VOC Emissions: lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Total HAP Emissions from Additional Product			

Note: If this tank(s) contains more than two different products, please attach additional pages.

FACILITY NAME: **AltEn, LLC**DATE: **January 2013**NDEQ Facility ID#: **84069**Emission Point Identification#(s): **TK - 803**

Note: This page must be completed for each tank currently used in the storage of an organic liquid or material containing hazardous air pollutants. A single section may be completed for several tanks ONLY if the tanks are identical in size and contents. In addition to completing this section, the most recent TANKS Program must be completed for each storage tank. The "Detailed Format" output should be printed out and attached to this form. You can obtain the TANKS program at <http://www.epa.gov/ttn/chief/software/tanks/>. If you are unable to complete this program, contact the Department for assistance.

Section 6.7.2: Tank Emissions – Tank Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): TK - 803		2) Installation Date: <input type="checkbox"/> New Unit	
3) Tank Name/Description: Off – Spec Tank			
4) Identify the material(s) contained in this tank: 190 Proof Ethanol			
5) TANKS program output attached? <input checked="" type="checkbox"/> YES		6) TANKS Program Version: 4.09d <input type="checkbox"/> N/A	
7) Maximum Capacity: 22,600 Gallons		8) Max. Working Volume: 22,600 Gallons	
9) Tank Dimensions: Height 16 Feet		Length - Feet Diameter: 15.5 Feet	
10) Tank Orientation: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Horizontal		Tank Location: <input checked="" type="checkbox"/> Above Ground <input type="checkbox"/> Underground	
11) Type of Tank: <input checked="" type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating Roof <input type="checkbox"/> Internal Floating Roof <input type="checkbox"/> Other: 			
12) Type of Primary Seal (if using a floating roof): <input type="checkbox"/> Mechanical Shoe <input type="checkbox"/> Liquid Mounted <input type="checkbox"/> Vapor Mounted <input type="checkbox"/> N/A			

13) Air Pollution Control Equipment

Is there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If additional pollutants are being controlled, attach additional information.

14) New Source Performance Standard Applicability

This tank is subject to:

If unknown contact the department for additional information.

☐ NSPS, Subpart K☐ NSPS, Subpart Ka☒ NSPS, Subpart Kb☐ Other: 15) Additional Information Attached? ☐ YES ☒ NO

FACILITY NAME: AltEn, LLCDATE: January 2013NDEQ Facility ID#: 84069Emission Point Identification#(s): TK - 803**Section 6.7.3: Tank Emissions – Product Information****IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information1) Emission Unit ID#(s): **TK - 803**2) Is this tank(s) restricted to storing only one product? ☒ YES ☐ NO

If this tank stores more than one product, how many different products are stored in this tank?

(Note: The Product Specifications section (below) must be filled out for each product stored)

3) Product SpecificationsPrimary Product Name: **190 Proof Ethanol**(A) Total VOC Emissions: **2,428.02**

lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Acetaldehyde	0.0002	0.049	0.00024
Methanol	0.0002	0.049	0.00024
Acrolein	0.0001	0.024	0.00012
Formaldehyde	0.0001	0.024	0.00012
Total HAP Emissions from Primary Product		1.46	0.00073

3) Product Specifications

Additional Product Name:

(A) Total VOC Emissions:

lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Total HAP Emissions from Additional Product			

Note: If this tank(s) contains more than two different products, please attach additional pages.

FACILITY NAME: **AltEn, LLC**DATE: **January 2013**NDEQ Facility ID#: **84069**Emission Point Identification#(s): **TK - 808**

Note: This page must be completed for each tank currently used in the storage of an organic liquid or material containing hazardous air pollutants. A single section may be completed for several tanks ONLY if the tanks are identical in size and contents. In addition to completing this section, the most recent TANKS Program must be completed for each storage tank. The "Detailed Format" output should be printed out and attached to this form. You can obtain the TANKS program at <http://www.epa.gov/ttn/chief/software/tanks/>. If you are unable to complete this program, contact the Department for assistance.

Section 6.7.2: Tank Emissions – Tank Information**IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): TK - 808		2) Installation Date: <input type="checkbox"/> New Unit	
3) Tank Name/Description: Denaturant Storage Tank			
4) Identify the material(s) contained in this tank: Denaturant (Natural Gasoline)			
5) TANKS program output attached? <input checked="" type="checkbox"/> YES		6) TANKS Program Version: 4.09d <input type="checkbox"/> N/A	
7) Maximum Capacity: 22,600 Gallons		8) Max. Working Volume: 22,600 Gallons	
9) Tank Dimensions:	Height 16 Feet	Length - Feet	Diameter 15.50 Feet
10) Tank Orientation: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Horizontal		Tank Location: <input checked="" type="checkbox"/> Above Ground <input type="checkbox"/> Underground	
11) Type of Tank: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating Roof <input checked="" type="checkbox"/> Internal Floating Roof <input type="checkbox"/> Other: 			
12) Type of Primary Seal (if using a floating roof): <input checked="" type="checkbox"/> Mechanical Shoe <input type="checkbox"/> Liquid Mounted <input type="checkbox"/> Vapor Mounted <input type="checkbox"/> N/A			

13) Air Pollution Control EquipmentIs there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If additional pollutants are being controlled, attach additional information.

14) New Source Performance Standard Applicability

This tank is subject to:

If unknown contact the department for additional information.

☐ NSPS, Subpart K
☐ NSPS, Subpart Ka☒ NSPS, Subpart Kb
☐ Other: **15) Additional Information Attached?** ☐ YES ☒ NO

Section 6.7.3: Tank Emissions – Product Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): **TK - 808**

2) Is this tank(s) restricted to storing only one product? ☒ **YES** ☐ **NO**

If this tank stores more than one product, how many different products are stored in this tank?
(Note: The Product Specifications section (below) must be filled out for each product stored)

3) Product Specifications

Primary Product Name: **Denaturant (Natural Gasoline)**

(A) Total VOC Emissions: **2,047.58** lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Benzene	0.0025	0.96	0.00048
Hexane	0.05	19.22	0.0096
Toluene	0.005	1.92	0.00096
Xylene	0.0005	0.19	0.000096
Cumene	0.0001	0.04	0.000019
Ethylbenzene	0.00005	0.02	0.0000096
Carbon Disulfide	0.00002	0.01	0.000038
Total HAP Emissions from Primary Product		22.36	0.0112

3) Product Specifications

Additional Product Name:

(A) Total VOC Emissions: lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Total HAP Emissions from Additional Product			

Note: If this tank(s) contains more than two different products, please attach additional pages.

FACILITY NAME: **AltEn, LLC**DATE: **January 2013**NDEQ Facility ID#: **84069**Emission Point Identification#(s): **TK - 810**

Note: This page must be completed for each tank currently used in the storage of an organic liquid or material containing hazardous air pollutants. A single section may be completed for several tanks ONLY if the tanks are identical in size and contents. In addition to completing this section, the most recent TANKS Program must be completed for each storage tank. The "Detailed Format" output should be printed out and attached to this form. You can obtain the TANKS program at <http://www.epa.gov/ttn/chief/software/tanks/>. If you are unable to complete this program, contact the Department for assistance.

Section 6.7.2: Tank Emissions –Tank Information**IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information

1) Emission Unit ID#(s): TK - 810		2) Installation Date: <input type="checkbox"/> New Unit	
3) Tank Name/Description: Denatured Ethanol Storage Tank			
4) Identify the material(s) contained in this tank: Denatured Ethanol			
5) TANKS program output attached? <input checked="" type="checkbox"/> YES		6) TANKS Program Version: 4.09d <input type="checkbox"/> N/A	
7) Maximum Capacity: 553,830 Gallons		8) Max. Working Volume: 553,830 Gallons	
9) Tank Dimensions: Height 40 Feet		Length - Feet	
Diameter 47.75 Feet			
10) Tank Orientation: <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Horizontal		Tank Location: <input checked="" type="checkbox"/> Above Ground <input type="checkbox"/> Underground	
11) Type of Tank: <input type="checkbox"/> Fixed Roof <input type="checkbox"/> External Floating Roof <input checked="" type="checkbox"/> Internal Floating Roof <input type="checkbox"/> Other: 			
12) Type of Primary Seal (if using a floating roof): <input checked="" type="checkbox"/> Mechanical Shoe <input type="checkbox"/> Liquid Mounted <input type="checkbox"/> Vapor Mounted <input type="checkbox"/> N/A			

13) Air Pollution Control EquipmentIs there an air pollution control device(s) associated with this unit? ☐ YES ☒ NO

Control Equipment ID#	Type of Control Equipment	Pollutant(s) Controlled	% Control Efficiency	Installation Date

If additional pollutants are being controlled, attach additional information.

14) New Source Performance Standard Applicability

This tank is subject to:
If unknown contact the department for additional information.

<input type="checkbox"/> NSPS, Subpart K	<input checked="" type="checkbox"/> NSPS, Subpart Kb
<input type="checkbox"/> NSPS, Subpart Ka	<input type="checkbox"/> Other:

15) Additional Information Attached? ☐ YES ☒ NO

FACILITY NAME: AltEn, LLCDATE: January 2013NDEQ Facility ID#: 84069Emission Point Identification#(s): TK - 810**Section 6.7.3: Tank Emissions – Product Information****IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING**

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Tank Information1) Emission Unit ID#(s): TK - 8012) Is this tank(s) restricted to storing only one product? ☒ YES ☐ NO

If this tank stores more than one product, how many different products are stored in this tank?

(Note: The Product Specifications section (below) must be filled out for each product stored)

3) Product SpecificationsPrimary Product Name: Denatured Ethanol(A) Total VOC Emissions: 384.35 lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Acetaldehyde	0.000194	0.0397	0.000199
Methanol	0.000194	0.0397	0.000199
Acrolein	0.000097	0.0199	0.0000993
Formaldehyde	0.000097	0.0199	0.0000993
Benzene	0.000075	0.0154	0.0000768
Hexane	0.0015	3.07	0.00154
Toluene	0.00015	0.0307	0.000154
*Refer to attached Tanks Calculations for additional HAPs			
Total HAP Emissions from Primary Product		4.76	0.00238

3) Product Specifications

Additional Product Name:

(A) Total VOC Emissions: lb/year

Hazardous Air Pollutant	(B) Weight % HAP in VOC Emissions	HAP Emissions	
		(C) = (A)x(B) (lb/yr)	(D) = (C)/2000 (ton/yr)
Total HAP Emissions from Additional Product			

Note: If this tank(s) contains more than two different products, please attach additional pages.



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Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#(s): EP - 13

Section 6.8: Cooling Tower Information

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

Cooling Tower Information

1) Unit ID#: EP - 13	2) Installation Date: <input type="checkbox"/> New Unit
3) Number of Cooling Tower Cells: 2	4) Drift Loss (DL) Percent: 0.005 % Vendor guarantee attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Submitted Previously
5) Total Circulation Rate: 866,640 gal/hr	Total Circulation Rate: kgal/year

6) Total Dissolved Solid (TDS) Concentration

Largest Single Sampling: ppm	Annual Average Rate: 2400 ppm
-------------------------------------	--------------------------------------

7) Additive Information

Are/Will any chemicals added to the cooling water that causes VOC or HAP to be emitted into the air? ☐ YES ☒ NO
If YES, complete the following about the chemicals:

Additive Name	Amount Used (gallon/year)	Product Density (lb/gallon)	Weight Percent VOC (%)
(1)			
(2)			
(3)			

If more than three additives are added to your cooling tower water, attach additional pages so all additives are listed.

Additive (1)		Additive (2)		Additive (3)	
Hazardous Air Pollutant	Weight Percent HAP (%)	Hazardous Air Pollutant	Weight Percent HAP (%)	Hazardous Air Pollutant	Weight Percent HAP (%)

If more than six HAPs are contained in your additive(s), attach additional pages so all HAPs are listed.

8) Potential to Emit Calculations Attached? ☒ YES

9) OP Application ONLY: Actual Emission Calculations Attached? ☐ YES

10) Additional Information Attached? ☐ YES ☒ NO



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Air Quality Permitting Application Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification #: EP - 14

Section 6.9: Haul Roads

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

1) Is the NDEQ haul road spreadsheet attached as a substitute for items (2) through (8) below?

☐ Yes, attach spreadsheet and skip to item (9) below

☒ No, fill out table below

Haul Road / Traffic Parameters

(2) Activity / Road Description	(3) Road Type / Silt Value		(4) Roundtrip Length (ft)		(5) Truck Weight (tons)		(6) Ave. Speed (mph)	(7) Annual Throughput (units/yr)	(8) Ave. Truck Capacity (units/truck)
			empty	full	empty	full			
Denaturant	P	3.00	199,016	233,627	15	40	10	723,000 gallons	7,500 Gal
Denatured Ethanol	P	3.00	7,248,046	7,852,050	15	40	10	24,100,000 gal	7,500 Gal
Grain	P	3.00	17,027,481	21,671,339	15	40	10	237,965 tons	25 Tons
Wet DGS	P	3.00	9,331,849	9,712,741	15	40	10	111,325 tons	25 Tons
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	
								<input type="checkbox"/>	

9) Silt loading/content values were obtained from (i.e. Testing, AP-42 defaults): Facility requested

10) To assist in verification of haul road lengths and traffic speeds, please attach a plan view sketch indicating on-site haul road traffic patterns. Traffic sketch attached? ☒ Yes

11) Requested/Existing permit limits for annual throughput? N/A

12) Haul road emission calculations are attached or included with your application? ☒ Yes

Estimated Miles

Grain Receiving: 0.77 miles round-trip, 0.43 miles full, 0.34 miles empty

Wet DGS: 0.81 miles round-trip, 0.41 miles full, 0.41 miles empty

Denaturant: 0.85 miles round-trip, 0.46 miles full, 0.39 miles empty

Denatured Ethanol: 0.89 miles round-trip, 0.43 miles full, 0.46 miles empty



Google earth

feet 1000
meters 300





Air Quality Permitting Application
Form 6.0: Emission Point Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 5

Section 6.10: Equipment Leaks

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING
Do NOT use pencil to fill out this application. Please type responses or print using black ink.

1) Equipment Leak Volatile Organic Compound (VOC) Emission Calculations

(A) Type of Component/Product	(B) Number of Components	(C) Leaking Emission Factor (kg/hr/source)	Uncontrolled VOC Emissions	(E) LDAR Control Efficiency (%)	VOC Controlled Emissions
			(D) = (B) x (C) x 9.68 (ton/year)		(F) = (D) x [1-(E)] (tons/yr)
Light Liquid Valves	360	0.00403	14.00	84%	2.24
Light Liquid Pumps	25	0.0199	4.80	69%	1.49
Gas Valves	30	0.00597	1.73	87%	0.22
Pressure Relief Valves	7	0.104	7.02	0%	7.02
Open Pipes	35	0.0017	0.57	0%	0.57
Sample Connections	12	0.015	1.74	0%	1.74
Flanges (Connectors)	455	0.00183	8.03	87%	1.04
Total VOC Emissions from Equipment Leaks			37.89	-	14.33

Additional Information Attached? ☐ YES ☒ NO



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**Air Quality Permitting Application
Form 6.0: Emission Point Information**FACILITY NAME: AltEn, LLCDATE: January 2013NDEQ Facility ID#: 84069Emission Point Identification#: EP - 5**Section 6.10: Equipment Leaks****2) Equipment Leak Hazardous Air Pollutant (HAP) Emission Calculations**

(G) Product being leaked:	(F) Total Controlled VOC Emissions (from page 1):	tons/year
(H) Hazardous Air Pollutant	(I) Weight % HAP in VOC	(J) = (F) x (I) HAP Emissions (ton/yr)
Formaldehyde	0.000169	0.002
Acetaldehyde	0.155	2.221
Methanol	0.015	0.215
Acrolein	0.0045	0.064
Total HAP Emissions from Equipment Leaks		2.503



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Air Quality Permitting Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 7.1: Combustion Flare

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment ID#: EP - 9	2) Installation Date: <input type="checkbox"/> New Unit
3) Control Equipment Name/Description: Digester Flare	
4) Maximum Flare Rated Capacity: 54 MMBtu/hr	5) Maximum Pilot Rated Capacity: N/A MMBtu/hr
6) Operating Hours Limitation (include units): 8,760 hours/year	

7) Unit Information

List all the emission units that are controlled by the combustion flare:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
	Digesters	Digesters	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than six units' emissions are controlled by this combustion flare, attach additional pages so all emission units are accounted for.

If any units routed to this flare will combust their own fuel, complete Section 6.1 or Section 6.2 for each unit as appropriate.

¹Unit Types could include: Conveyor, Elevator, Hammermill, Silo, Bin, Crusher, Reactor, Fermenter, Loadout Spout, etc.

8) Stack Information ☐ N/A

Height	Top Inside Diameter	Stack Discharge	Flare Type	Exit Velocity of Gas	Exit Temperature of Gas
33 ft	10.42 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain cap	<input type="checkbox"/> Enclosed <input type="checkbox"/> Open	m/s	K

9) Flare Fuel Information

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Biogas	54 MMBtu/hr	630 Btu/scf	% Sulfur: N/A % Ash:	<input checked="" type="checkbox"/> N/A
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A

If the flare does/will combust more than two fuel types, attach additional pages so all fuels are described.



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Air Quality Permitting Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 7.1: Combustion Flare (continued)

10) Pilot Fuel Information				
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	
If the pilot does/will combust more than one type of fuel, attach additional information so all fuels are provided.				
11) Control Information				
Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency	
If additional pollutants are being controlled, attach additional information.				
12) Potential to Emit Calculations Attached? <input checked="" type="checkbox"/> YES				
13) Additional Information Attached? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO				

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

Actual Flare Information					
14) Indicate the quantity of each fuel type that has been combusted in the flare.					
Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year		
	Number	Units	Number	Units	
15) Provide the operating hours of this unit for the past five years (past year if new source):					
Year					
Hours Operated					



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Air Quality Permitting Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 9

Section 7.1: Combustion Flare (continued)

Actual Pilot Information

16) Indicate the quantity of each fuel type that has been combusted in the flare.

Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year	
	Number	Units	Number	Units

17) Provide the operating hours of this unit for the past five years (past year if new source):

Year					
Hours Operated					

18) Actual Emission Calculations Attached? ☐ YES

19) Additional Information Attached? ☐ YES ☐ NO



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Air Quality Permitting Application

Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 7.1: Combustion Flare

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

- 1) Control Equipment ID#: EP - 12 2) Installation Date: _____ ☐ New Unit
- 3) Control Equipment Name/Description: Loadout Vapor Combustion Unit
- 4) Maximum Flare Rated Capacity: 4.8 MMBtu/hr 5) Maximum Pilot Rated Capacity: N/A MMBtu/hr
- 6) Operating Hours Limitation (include units): 8,760 hours/year

7) Unit Information

List all the emission units that are controlled by the combustion flare:

Unit ID#	Unit Type ¹	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
	Loadout	Truck Loadout	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than six units' emissions are controlled by this combustion flare, attach additional pages so all emission units are accounted for.

If any units routed to this flare will combust their own fuel, complete Section 6.1 or Section 6.2 for each unit as appropriate.

¹Unit Types could include: Conveyor, Elevator, Hammermill, Silo, Bin, Crusher, Reactor, Fermenter, Loadout Spout, etc.

8) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Flare Type	Exit Velocity of Gas	Exit Temperature of Gas
20 ft	1 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain cap	<input type="checkbox"/> Enclosed <input type="checkbox"/> Open	m/s	K

9) Flare Fuel Information

Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
Waste Gas	4.8 MMBtu/hr	850 Btu/scf	% Sulfur: N/A % Ash:	<input checked="" type="checkbox"/> N/A
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur: % Ash:	<input type="checkbox"/> N/A

If the flare does/will combust more than two fuel types, attach additional pages so all fuels are described.



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Air Quality Permitting Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 7.1: Combustion Flare (continued)

10) Pilot Fuel Information				
Type/Grade of Fuel Combusted	Maximum Fuel Capacity (include units)	Heat Content (include units)	Fuel Specifications	Operating Limitation (include units)
			% Sulfur:	<input type="checkbox"/> N/A
			% Ash:	
If the pilot does/will combust more than one type of fuel, attach additional information so all fuels are provided.				
11) Control Information				
Pollutant(s) Controlled	% Control Efficiency	Pollutant(s) Controlled	% Control Efficiency	
If additional pollutants are being controlled, attach additional information.				
12) Potential to Emit Calculations Attached?			<input checked="" type="checkbox"/> YES	
13) Additional Information Attached?			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

Actual Flare Information					
14) Indicate the quantity of each fuel type that has been combusted in the flare.					
Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year		
	Number	Units	Number	Units	
15) Provide the operating hours of this unit for the past five years (past year if new source):					
Year					
Hours Operated					



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Air Quality Permitting Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point Identification#: EP - 12

Section 7.1: Combustion Flare (continued)

Actual Pilot Information					
16) Indicate the quantity of each fuel type that has been combusted in the flare.					
Fuel Type	Maximum Amount Combusted in the Previous Five Years		Amount Last Year		
	Number	Units	Number	Units	
17) Provide the operating hours <u>of this unit</u> for the past five years (past year if new source):					
Year					
Hours Operated					
18) Actual Emission Calculations Attached? <input type="checkbox"/> YES					
19) Additional Information Attached? <input type="checkbox"/> YES <input type="checkbox"/> NO					



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Air Quality Permit Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 1

Section 7.3: Baghouse (Fabric Filter)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment ID#: EP - 1

2) Installation Date:

☐ New Unit

3) Control Equipment Name/Description: Grain Unloading Baghouse

4) Unit Information

List all the emission units that are controlled by the baghouse:

Unit ID#	Unit Type	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Dump Pit	Grain Receiving Station	2,725 bu/hr		<input type="checkbox"/>
-	Silo	Grain Silo	200,000 bu		<input type="checkbox"/>
-	Grain Receiving	Elevator Leg	-		<input type="checkbox"/>
					<input type="checkbox"/>

If more than four units' emissions are controlled by this baghouse, attach additional pages so all emission units are accounted for.

5) Baghouse Information

Manufacturer	Model Name	Model Number	Number of Compartments	Number of Bags per Compartment

Draft (check one):

Induced/Negative ☒

Forced/Positive ☐

Other: ☐ Describe:

6) Bag (Fabric Filter) Information

Bag (filter) Surface Area (ft²):

Length of Bag (inches):

Diameter of Bag (inches):

Air to Bag Ratio:

Type of Fabric:

Polyester

Fabric Weight (oz):

Fabric Weave:

Fabric Finish:

Fabric Properties (check all that apply):

Moisture Binding ☐

Chemical Resistivity ☐

Other: ☐ Describe:

If you do not have and cannot obtain some of the bag information, please state it as unknown.

7) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
18.96 ft	2.5 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain Cap	9.314 m/s	°K

8) Baghouse Temperature Information

Maximum Design Temperature Capability: **Ambient** °F ☐ °C ☐

Inlet Temperature

Maximum:

°F ☐

°C ☐

Minimum:

°F ☐

°C ☐

Outlet Temperature

Maximum:

°F ☐

°C ☐

Minimum:

°F ☐

°C ☐



Nebraska
DEQ

Air Quality Permit Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 1

Section 7.3: Baghouse (Fabric Filter; continued)

9) Baghouse Operational and Monitoring Information

Maximum Design Air Flow (acfm):	<u>9,000</u>	Maximum Operating Gas Exhaust Flow (acfm):	
Maximum Operating Pressure Drop (inches water):		Minimum Operating Pressure Drop (inches water):	
Maximum Inlet Gas Stream Moisture (%):			
Monitoring (check one and give a brief description):			
Continuous Monitoring:	<input type="checkbox"/>	Describe:	
Other Monitoring:	<input checked="" type="checkbox"/>	Describe:	<u>Visual Monitoring</u>

10) Baghouse Maintenance Information

Method for Determining When to Clean Bag:			
Method of Bag Cleaning (check all that apply):			
Automatic	<input type="checkbox"/>	Mechanical Shaker	<input type="checkbox"/>
Manual	<input type="checkbox"/>	Reverse Flow	<input type="checkbox"/>
Timed	<input type="checkbox"/>	Air Pulse	<input type="checkbox"/>
Other	<input type="checkbox"/>	Describe:	
Simple Bag Collapse	<input type="checkbox"/>	Ring Bag Collapse	<input type="checkbox"/>
		Sonic	<input type="checkbox"/>

11) Control Information

Uncontrolled Emission Rate (lb/hr):	Controlled Emission Rate (lb/hr):
Minimum Size of Particles Collected:	Loading Rate (include units):
Pollutant: <u>PM/PM10/PM2.5</u>	Capture Efficiency (%): <u>~99%</u>
Pollutant:	Capture Efficiency (%):
Pollutant:	Capture Efficiency (%):
Test or Manufacturer's Data Available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Test or Manufacturer's Data Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

12) Particle Size Distribution

If known, enter the particle size distribution:

Size (microns)	Weight (% of total)	Cumulative (%)

13) Potential to Emit Calculations Attached? ☒ YES

14) Additional Information Attached? ☐ YES ☒ NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

15) Actual Operating Information

Provide the operating hours of this baghouse for the past five years (past year if new unit):

Year					
Hours Operated					

16) Actual Emission Calculations Attached? ☐ YES

17) Additional Information Attached? ☐ YES ☐ NO



Nebraska
DEQ

Air Quality Permit Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEr, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 2

Section 7.3: Baghouse (Fabric Filter)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment ID#: EP - 2

2) Installation Date:

☒ New Unit

3) Control Equipment Name/Description: Scalper/Day Tank Baghouse

4) Unit Information

List all the emission units that are controlled by the baghouse:

Unit ID#	Unit Type	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Scalper	Scalper	-		<input type="checkbox"/>
-	Tank	Day Tank	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than four units' emissions are controlled by this baghouse, attach additional pages so all emission units are accounted for.

5) Baghouse Information

Manufacturer	Model Name	Model Number	Number of Compartments	Number of Bags per Compartment

Draft (check one):

Induced/Negative ☒

Forced/Positive ☐

Other: ☐ Describe:

6) Bag (Fabric Filter) Information

Bag (filter) Surface Area (ft²):

Length of Bag (inches):

Diameter of Bag (inches):

Air to Bag Ratio:

Type of Fabric:

Polyester

Fabric Weight (oz):

Fabric Weave:

Fabric Finish:

Fabric Properties (check all that apply):

Moisture Binding ☐

Chemical Resistivity ☐

Other: ☐ Describe:

If you do not have and cannot obtain some of the bag information, please state it as unknown.

7) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
40 ft	0.58 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain Cap	96.136 m/s	°K

8) Baghouse Temperature Information

Maximum Design Temperature Capability: Ambient °F ☐ °C ☐

Inlet Temperature

Maximum:

°F ☐

°C ☐

Minimum:

°F ☐

°C ☐

Outlet Temperature

Maximum:

°F ☐

°C ☐

Minimum:

°F ☐

°C ☐



Nebraska
DEQ

Air Quality Permit Application
Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 2

Section 7.3: Baghouse (Fabric Filter; continued)

9) Baghouse Operational and Monitoring Information

Maximum Design Air Flow (acfm):	<u>5,000</u>	Maximum Operating Gas Exhaust Flow (acfm):	
Maximum Operating Pressure Drop (inches water):		Minimum Operating Pressure Drop (inches water):	
Maximum Inlet Gas Stream Moisture (%):			
Monitoring (check one and give a brief description):			
Continuous Monitoring:	<input type="checkbox"/>	Describe:	
Other Monitoring:	<input checked="" type="checkbox"/>	Describe: <u>Visual Monitoring</u>	

10) Baghouse Maintenance Information

Method for Determining When to Clean Bag:			
Method of Bag Cleaning (check all that apply):			
Automatic	<input type="checkbox"/>	Mechanical Shaker	<input type="checkbox"/>
Manual	<input type="checkbox"/>	Reverse Flow	<input type="checkbox"/>
Timed	<input type="checkbox"/>	Air Pulse	<input type="checkbox"/>
Other	<input type="checkbox"/>	Describe:	
Simple Bag Collapse	<input type="checkbox"/>	Ring Bag Collapse	<input type="checkbox"/>
		Sonic	<input type="checkbox"/>

11) Control Information

Uncontrolled Emission Rate (lb/hr):	Controlled Emission Rate (lb/hr):
Minimum Size of Particles Collected:	Loading Rate (include units):
Pollutant: <u>PM/PM10/PM2.5</u>	Capture Efficiency (%): <u>~99%</u>
Pollutant:	Capture Efficiency (%):
Pollutant:	Capture Efficiency (%):
Test or Manufacturer's Data Available: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Test or Manufacturer's Data Attached: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

12) Particle Size Distribution

If known, enter the particle size distribution:		
Size (microns)	Weight (% of total)	Cumulative (%)

13) Potential to Emit Calculations Attached? ☒ YES

14) Additional Information Attached? ☐ YES ☒ NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

15) Actual Operating Information

Provide the operating hours of this baghouse for the past five years (past year if new unit):					
Year					
Hours Operated					

16) Actual Emission Calculations Attached? ☐ YES

17) Additional Information Attached? ☐ YES ☐ NO



Nebraska
DEQ

Air Quality Permit Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 3

Section 7.3: Baghouse (Fabric Filter)

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment ID#: EP - 3

2) Installation Date: _____

☐ New Unit

3) Control Equipment Name/Description: Hammermill Baghouse

4) Unit Information

List all the emission units that are controlled by the baghouse:

Unit ID#	Unit Type	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Hammermill	Hammermill	-		<input type="checkbox"/>
-	Conveyor	Conveyor	-		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

If more than four units' emissions are controlled by this baghouse, attach additional pages so all emission units are accounted for.

5) Baghouse Information

Manufacturer	Model Name	Model Number	Number of Compartments	Number of Bags per Compartment

Draft (check one):

Induced/Negative ☒

Forced/Positive ☐

Other: ☐ Describe: _____

6) Bag (Fabric Filter) Information

Bag (filter) Surface Area (ft²): _____

Length of Bag (inches): _____

Diameter of Bag (inches): _____

Air to Bag Ratio: _____

Type of Fabric: _____

Polyester

Fabric Weight (oz): _____

Fabric Weave: _____

Fabric Finish: _____

Fabric Properties (check all that apply):

Moisture Binding ☐

Chemical Resistivity ☐

Other: ☐ Describe: _____

If you do not have and cannot obtain some of the bag information, please state it as unknown.

7) Stack Information

☐ N/A

Height	Top Inside Diameter	Stack Discharge	Exit Velocity of Gas	Exit Temperature of Gas
36 ft	1 ft	<input type="checkbox"/> Horizontal <input checked="" type="checkbox"/> Vertical <input type="checkbox"/> Vertical with Rain Cap	21.34 m/s	°K

8) Baghouse Temperature Information

Maximum Design Temperature Capability: Ambient °F ☐ °C ☐

Inlet Temperature

Maximum: _____

°F ☐ °C ☐

Minimum: _____

°F ☐ °C ☐

Outlet Temperature

Maximum: _____

°F ☐ °C ☐

Minimum: _____

°F ☐ °C ☐



Nebraska
DEQ

Air Quality Permit Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 3

Section 7.3: Baghouse (Fabric Filter; continued)

9) Baghouse Operational and Monitoring Information

Maximum Design Air Flow (acfm):	<u>3,300</u>	Maximum Operating Gas Exhaust Flow (acfm):	
Maximum Operating Pressure Drop (inches water):		Minimum Operating Pressure Drop (inches water):	
Maximum Inlet Gas Stream Moisture (%):			
Monitoring (check one and give a brief description):			
Continuous Monitoring:	<input type="checkbox"/>	Describe:	
Other Monitoring:	<input checked="" type="checkbox"/>	Describe:	<u>Visual Monitoring</u>

10) Baghouse Maintenance Information

Method for Determining When to Clean Bag:			
Method of Bag Cleaning (check all that apply):			
Automatic	<input type="checkbox"/>	Mechanical Shaker	<input type="checkbox"/>
Manual	<input type="checkbox"/>	Reverse Flow	<input type="checkbox"/>
Timed	<input type="checkbox"/>	Air Pulse	<input type="checkbox"/>
Other	<input type="checkbox"/>	Describe:	
Simple Bag Collapse	<input type="checkbox"/>	Ring Bag Collapse	<input type="checkbox"/>
Sonic	<input type="checkbox"/>		

11) Control Information

Uncontrolled Emission Rate (lb/hr):	Controlled Emission Rate (lb/hr):
Minimum Size of Particles Collected:	Loading Rate (include units):
Pollutant: <u>PM/PM10/PM2.5</u>	Capture Efficiency (%): <u>~99%</u>
Pollutant:	Capture Efficiency (%):
Pollutant:	Capture Efficiency (%):
Test or Manufacturer's Data Available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Test or Manufacturer's Data Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

12) Particle Size Distribution

If known, enter the particle size distribution:

Size (microns)	Weight (% of total)	Cumulative (%)

13) Potential to Emit Calculations Attached? ☒ YES

14) Additional Information Attached? ☐ YES ☒ NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

15) Actual Operating Information

Provide the operating hours of this baghouse for the past five years (past year if new unit):

Year					
Hours Operated					

16) Actual Emission Calculations Attached? ☐ YES

17) Additional Information Attached? ☐ YES ☐ NO



Nebraska
DEQ

Air Quality Permit Application Form 7.0: Control Equipment Information

FACILITY NAME: AltEn, LLC

DATE: January 2013

NDEQ Facility ID#: 84069

Emission Point ID#: EP - 6

Section 7.4: Wet Scrubber

IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS SECTION BEFORE COMPLETING.

Do NOT use pencil to fill out this application. Please type responses or print using black ink.

General Information

1) Control Equipment ID#: EP - 6 2) Installation Date: ☐ New Unit
3) Control Equipment Name/Description: Ethanol Absorber (CO₂ Scrubber)

4) Unit Information

List all emission units that are controlled by the wet scrubber:

Unit ID#	Unit Type	Unit Name	Maximum Capacity (include units)	Installation Date	New Unit
-	Fermenters	Fermenters (4)	-		<input type="checkbox"/>
-	Beer Well	Beer Well	-		<input type="checkbox"/>
-	Tanks	1 Mash Tank, 1 Liquefaction Tank, 1 Yeast Propagation Tank, 2 Stillage Tanks	-		<input type="checkbox"/>
-	Beer Stripper	Beer Stripper	-		<input type="checkbox"/>
-	Distillation Column	Distillation Column	-		<input type="checkbox"/>
-	Molecular Sieves	Molecular Sieves (2)	-		<input type="checkbox"/>

If more than four units' emissions are controlled by this wet scrubber, attach additional pages so that all emission units are accounted for.

5) Wet Scrubber Information

Manufacturer	Model Name	Model Number	System Type
		Custom	

6) Throat Type

Fixed ☐ Variable ☐ Not applicable ☐ Throat Dimensions (units):

7) Packing Tower Information - Proprietary

Packing Tower Dimensions (units): Packing Type: Packing Size (units):
Liquid Introduction Mechanism Yes ☐ No ☐ Describe:
Mist Eliminator Present Yes ☐ No ☐

8) Operational Information - Proprietary

Inlet Air Flow (acfm): Outlet Air Flow (acfm):
Minimum Pump Discharge Pressure (inches water): Maximum Pump Discharge Pressure (inches water):
Describe Pump Discharge Pressure Monitoring:
Additive Liquid Scrubbing Medium Type:
Percent of Scrubbing Medium Re-circulated: Scrubbing Medium Make-up Rate (gal/min):
Minimum Operating Liquid Flow Rate (gal/min): Maximum Operating Liquid Flow Rate (gal/min):
Minimum Operating Pressure Drop (inches water): Maximum Operating Pressure Drop (inches water):
Describe Relative Direction of Gas-Liquid Flow:
Describe Maintenance:



Nebraska
DEQ

Air Quality Permit Application
Form 7.0: Control Equipment Information

9) Monitoring			
Equipment:	Flow Gauge(s) <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>	Describe:
Monitoring:	Continuous <input checked="" type="checkbox"/>	Non-continuous <input type="checkbox"/>	Test Port(s) Present: Yes <input type="checkbox"/> No <input type="checkbox"/>
Describe Monitoring:			

FACILITY NAME: <u>AltEn, LLC</u>	DATE: <u>January 2013</u>
NDEQ Facility ID#: <u>84069</u>	Emission Point ID#: <u>EP - 6</u>

Section 7.4: Wet Scrubber (continued)

10) Control Information			
Uncontrolled Emission Rate (lb/hr):		Controlled Emission Rate (lb/hr): VOC – 12.0 lb/hr	
Pollutant Form:	Gas: <input checked="" type="checkbox"/>	Particulate: <input type="checkbox"/>	Gas and Particulate: <input type="checkbox"/>
Pollutant: VOC	Capture Efficiency (%): 100%		
Pollutant:	Capture Efficiency (%):		
Pollutant:	Capture Efficiency (%):		
Test or Manufacturer's Data Available: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Test or Manufacturer's Data Attached: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
11) Potential to Emit Calculations Attached?			<input checked="" type="checkbox"/> YES
12) Additional Information Attached?			<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

Complete the following ONLY if completing this Section as Part of an Operating Permit Application

13) Actual Operating Information					
Provide the operating hours of this baghouse for the past five years (past year if new unit):					
Year					
Hours Operated					
14) Actual Emission Calculations Attached?					<input type="checkbox"/> YES
15) Additional Information Attached?					<input type="checkbox"/> YES <input type="checkbox"/> NO

**EMISSION
CALCULATIONS**



"Potential to Emit" Emission Estimate:

1/22/13

Alten, LLC, Mead, Nebraska

24.1MM gallons/year Denatured Ethanol

237,965 tons/yr grain

8,498,750 bu/yr

200,325 tons/yr WDGS

Unit ID	Emission Source(s)	PM (tpy)	PM10 (tpy)	PM2.5 (tpy)	SO2 (tpy)	NOx (tpy)	CO (tpy)	VOC (tpy)	H ₂ S (tpy)	HAP (tpy)
EP-1	Grain Unloading Baghouse	2.70	2.70	2.70						
EP-2	Scalper/Day tank Baghouse	1.50	1.50	1.50						
EP-3	Hammermill Baghouse	1.24	1.24	1.24						
EP-4/EP-9	Package Boilers/Digester Flare ¹	3.97	3.97	3.97	98.29	51.22	25.47	2.86	1.07	1.91
EP-5	Fugitive Components							14.33		2.50
EP-6	Ethanol Absorber	8.76	4.38	4.38				52.56		12.92
EP-7	Liquid Storage Tanks							3.83		0.02
EP-8	Truck Loadout							1.21		0.02
EP-10	Wet DGS Storage	0.005	0.001	0.001				0.82		0.04
EP-11	Wet DGS Handling							0.83		
EP-12	Loadout Vapor Combustion Unit	0.160	0.160	0.16	0.013	0.40	1.01	0.12		
EP-13	Cooling Tower	3.80	3.80	3.80						
EP-14	Paved Roads	6.31	1.26	0.31						
EP-15	Auxiliary Boiler	0.15	0.15	0.15	0.01	2.00	1.68	0.11		0.04
EP-16	Fugitives (grain)	0.64	0.32	0.28						
	Totals, Plantwide	29.24	19.48	18.49	98.31	53.62	28.15	76.66	1.07	17.44

Notes:

Emissions are conservative and are considered worst case for permitting purposes

Emergency fire water pump engine is an electric, not diesel engine, therefore not included in PTE

PM/PM10/PM2.5 emissions based on minimum efficiency of collection system, includes uncaptured fugitives

Fugitive Components do not include distillation components operating under negative pressure

Trucks assumed carrying gasoline (worst case) prior to taking on load of denatured etoh

Truck Loadout VOCs controlled by 85.5% efficient vapor recovery unit

Wet Cake VOC and HAP emissions are based on engineering estimate as well as NDEQ factsheet emission factors.

¹Worst of 2 scenarios is used for established PTE for biogas/natural gas combustion

Total GHG Emissions from Combustion Sources

Boilers and Flares

TOTAL GHG Emissions	
GHG	Potential Emissions (tons/yr)
CO ₂	65,692.69
CH ₄	2.50
N ₂ O	0.44
GHGs (mass basis)	65,695.61
CO ₂ e	65,877.17

Hazardous Air Pollutant Emissions Summary

See Workbook for details of emission calculations

<i>Compound</i>	WDGS Storage & Handling	Ethanol Absorber	Package Boilers	Aux. Boiler	Fugitive losses	Product Storage	Truck loading	TOTAL
	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Acrolein	0.0017	1.752			0.064	0.0004	0.0002	1.82
Formaldehyde	0.0222	1.7520	0.0334	0.0015	0.0024	0.0004	0.0002	1.81
Acetaldehyde	0.0111	7.6650			2.2212	0.0007	0.0003	9.90
Methanol	0.0044	1.7520			0.2150	0.0007	0.0003	1.97
Hexane			0.8007	0.0353		0.0111	0.0047	0.85
Toluene			0.0015	0.0001		0.0011	0.0014	0.00
Benzene			0.0009	0.0000		0.0006	0.0024	0.00
Nickel			0.0009	0.0000				0.0010
Chromium			0.0006	0.0000				0.0007
Dichlorobenzene			0.0005	0.0000				0.0006
Cadmium			0.0005	0.0000				0.0005
Naphthalene			0.0003	0.0000			0.0000	0.0003
Manganese			0.0002	0.0000				0.0002
Mercury			0.0001	0.0000				0.0001
Arsenic			0.0001	0.0000				0.0001
Cobalt			0.0000	0.0000				0.0000
2-Methylnaphthalene			0.000011	0.0000				0.000011
Phenanthrene			0.000008	0.0000				0.000008
Pyrene			0.000002	0.0000				0.000002
Fluoranthene			0.000001	0.0000				0.000001
Fluorene			0.000001	0.0000				0.000001
Xylenes						0.0001	0.0031	0.0032
Cumene						0.0000		0.0000
Ethylbenzene						0.00001		0.0000
Carbon disulfide						0.00000		0.00000
Trimethylbenzene							0.0033	0.00330
Cyclohexane							0.00002	0.00002
Hydrogen Sulfide			1.0696					1.06960
Totals	0.0395	12.921	1.909	0.037	2.503	0.015	0.0158	

Total Potential to Emit 17.44

Grain Handling Emissions:

Basis: 24.1 MM gallons/year Denatured Ethanol

** Grain Handling/Storage is closed system
 Emissions based on AP-42 Particulate Emission Factors for Grain Elevators

PM/PM-10/PM-2.5 Emissions:

ID	Emission Source	Baghouse Aiflow (acfm)	Emission Factor (gr/scf)	Hours of Operation (hrs/yr)	Controlled PM/PM-10/PM-2.5 Emissions (lbs/hr)	Controlled PM/PM-10/PM-2.5 Emissions (tons/yr)
EP-1	Grain Receiving Baghouse	9,000	0.008	8,760	0.62	2.70
EP-2	Scalper/Day tank Baghouse	5,000	0.008	8,760	0.34	1.50
EP-3	Hammermill Baghouse	3,300	0.01	8,760	0.28	1.24
Total						5.44

Grain Handling Fugitive Emissions:

PM Emissions:

ID	Emission Source	Throughput (tpy)	Emission Factor (lb/ton)	Potential uncontrolled PM (tpy)	Controlled PM Emissions (tons/yr)
NA	Fugitives Receiving	237,965	0.035	4.16	0.208
NA	Fugitives Handling/Stor.	237,965	0.061	7.26	0.363
NA	Fugitives Grain Scalping	237,965	0.012	1.43	0.071
Total					0.643

PM-10 Emissions:

ID	Emission Source	Throughput (tpy)	Emission Factor (lb/ton)	Potential uncontrolled PM-10 (tpy)	Controlled PM-10 Emissions (tons/yr)
NA	Fugitives Receiving	237,965	0.0078	0.93	0.046
NA	Fugitives Handling/Stor.	237,965	0.034	4.05	0.202
NA	Fugitives Grain Scalping	237,965	0.012	1.43	0.071
Total					0.320

PM-2.5 Emissions:

ID	Emission Source	Throughput (tpy)	Emission Factor (lb/ton)	Potential uncontrolled PM-2.5 (tpy)	Controlled PM-2.5 Emissions (tons/yr)
NA	Fugitives Receiving	237,965	0.0013	0.15	0.008
NA	Fugitives Handling/Stor.	237,965	0.034	4.05	0.202
NA	Fugitives Grain Scalping	237,965	0.012	1.43	0.071
Total					0.281

Notes:

1. Fugitives are a result of uncaptured PM/PM10/PM2.5
2. Assumes ethanol plant will receive and store grain in their grain storage silos
3. Assumes additional control of fugitives by choked flow system
4. Calculations assume a 95% reduction in fugitives due to choked flow, equipment, and enclosures

Emissions from Cooling Tower:

Basis: Mass balance based on circulation rates, TDS, Drift Loss
Water density 8.34 lb/gal
Based on manufacturer's guarantee of 0.005% drift loss
All PM is assumed to be PM10, therefore PM = PM10
Cooling tower is based on two cells

Emission Source	Circulation rate (gal/hr)	TDS content (avg ppm)	Drift Loss (percent)	Operating hours (hrs/yr)	PM PTE (tons/yr)	PM10 PTE (tons/yr)	PM2.5 PTE (tons/yr)
Cooling Tower	866,640	2400	0.005	8760	3.80	3.80	3.80

Note: any increase in average TDS beyond 2400 ppm will result in increased PM/PM10/PM2.5 emissions.

Emissions from combustion of natural gas at package boiler

Basis: SO2 factor based on AP-42 emission factor; NOx factor based on AP-42 w/possible burner.
Unit assumed to operate maximum fuel input capacity
Assumed operation time: 8760 hr/yr

BTU content of bio gas: 630 Btu/scf
BTU content of natural gas: 1020 Btu/scf

Capacity:
Boiler 1 54.00 MMBtu/hr
Boiler 2 49.59 MMBtu/hr
Boiler combined will be limited to: 66 MMBtu/hr

Boilers will be limited to 578,160 MMBtu/year

Scenario 1 - 100% Natural Gas Combusted in Boilers, 100% Biogas Combusted in Flare

Boilers Emissions

Pollutant	Heat Input (MMBtu/hr)	E Factors lb/MMBtu	Factor Source	PTE lb/hr	PTE tpy
NOx	66.00	0.097	Vendor	6.40	28.04
SO2	66.00	0.006	Vendor	0.40	1.73
CO	66.00	0.021	Vendor	1.39	6.07
VOC	66.00	0.0054	AP-42, Table 1.4-2	0.36	1.56
PM	66.00	0.0075	AP-42, Table 1.4-2	0.50	2.17
PM10	66.00	0.0075	AP-42, Table 1.4-2	0.50	2.17
PM2.5	66.00	0.0075	AP-42, Table 1.4-3	0.50	2.17
H2S	66.00	---			

Anaerobic Digester Flare Emissions

Pollutant	Heat Input (MMBtu/hr)	E Factors lb/MMBtu	Factor Source	PTE lb/hr	PTE tpy
NOx	54	0.098	AP-42, Table 1.4-2	5.29	23.18
SO2	54	0.34	Chemical Process 2000, Inc.	18.36	80.42
CO	54	0.082	AP-42, Table 13.5-1	4.43	19.39
VOC	54	0.0055	AP-42, Table 1.4-2	0.30	1.30
PM	54	0.0076	AP-42, Table 1.4-2	0.41	1.80
PM10	54	0.0076	AP-42, Table 1.4-2	0.41	1.80
PM2.5	54	0.0076	AP-42, Table 1.4-2	0.41	1.80
H2S	54	0.0037	Chemical Process 2000, Inc.	0.20	0.88

Total Emissions from Scenario 1

Pollutant	PTE lb/hr	PTE tpy
NOx	11.69	51.22
SO2	18.76	82.15
CO	5.81	25.47
VOC	0.65	2.86
PM	0.91	3.97
PM10	0.91	3.97
PM2.5	0.91	3.97
H2S	0.20	0.88

Scenario 2 - 100% Biogas Combusted in Boilers, Flare not operating

Boilers Emissions

Pollutant	Heat Input (MMBtu/hr)	E Factors lb/MMBtu	Factor Source	PTE lb/hr	PTE tpy
NOx	66.00	0.011	Vendor	0.73	3.18
SO2	66.00	0.34	Chemical Process 2000, inc	22.44	98.29
CO	66.00	0.021	Vendor	1.39	6.07
VOC	66.00	0.0054	AP-42, Table 1.4-2	0.36	1.56
PM	66.00	0.0075	AP-42, Table 1.4-2	0.50	2.17
PM10	66.00	0.0075	AP-42, Table 1.4-2	0.50	2.17
PM2.5	66.00	0.0075	AP-42, Table 1.4-2	0.50	2.17
H2S	66.00	0.0037	Chemical Process 2000, inc	0.24	1.07

WORST CASE EMISSIONS

- used for potential to emit

Pollutant	PTE lb/hr	PTE tpy	Scenario?
NOx	11.69	51.22	Scenario 1
SO2	22.44	98.29	Scenario 2
CO	5.81	25.47	Scenario 1
VOC	0.65	2.86	Scenario 1
PM	0.91	3.97	Scenario 1
PM10	0.91	3.97	Scenario 1
PM2.5	0.91	3.97	Scenario 1
H2S	0.24	1.07	Scenario 2

Package Boilers Natural Gas Combustion HAPS:

Basis: Emission factors taken from AP-42, Table 1.4-3 and 1.4-4 (7/98)

Only factors for pollutants noted as HAPs as defined by Section 112(b) of the Clean Air Act listed

Factors marked as "less than" are omitted as emissions are considered negligible

Butane, ethane, propane and pentane are assumed to be combusted in the TO and assumed negl.

The following metals are not listed as HAPs; barium, copper, molybdenum, vanadium, zinc

***Boiler heat input will be limited to 66 MMBtu/hr or 578,160 MMBtu/year; therefore, using maximum heat input of 103.59 MMBtu/hr to demonstrate worst-case HAP emissions.**

Units	Organic Compound	Emission Factor (lb/million ft3)	Amount Per Year (MM scf)	Emissions (lb/yr)	PTE Emissions (tpy)
See Below	Hexane	1.8	890	1601.38	0.8007
	Formaldehyde	7.50E-02		66.72	0.0334
	Toluene	3.40E-03		3.02	0.0015
	Benzene	2.10E-03		1.87	0.0009
	Nickel	2.10E-03		1.87	0.0009
	Chromium	1.40E-03		1.25	0.0006
	Dichlorobenzene	1.20E-03		1.07	0.0005
	Cadmium	1.10E-03		0.98	0.0005
	Naphthalene	6.10E-04		0.54	0.0003
	Manganese	3.80E-04		0.34	0.0002
	Mercury	2.60E-04		0.23	0.0001
	Arsenic	2.00E-04		0.18	0.0001
	Cobalt	8.40E-05		0.07	0.0000
	2-Methylnaphthalene	2.40E-05		0.02	0.0000
	Phenanthrene	1.70E-05		0.02	0.0000
	Pyrene	5.00E-06		0.00	0.0000
	Fluoranthene	3.00E-06		0.00	0.0000
	Fluorene	2.80E-06		0.00	0.0000
Totals:				1,679.57	0.840

Boiler Natural Gas Combustion:

Boiler 1	54.00 MMBtu/hr	8,760 hr/yr
Boiler 2	49.59 MMBtu/hr	8,760 hr/yr
	<u>103.59 MMBtu/hr</u>	<u>8,760 hr/yr</u>

103.59 MMBtu/hr, maximum potential
1,020 BTU/scf
101,558.82 scf/hr, maximum potential
890 MMscf/yr

GHG Emissions from Boilers and Flares

Scenario 1: 100% Natural Gas combusted at Boilers, 100% Biogas Combusted at Flare

Package Boilers

Heat Input Needed: 66.00 MMBtu/hr (NG Combustion)
Operating hours: 8,760.00 hrs/yr
Conversion Factor: 2.20462 lbs/kg

Boilers 100% NG Combustion				
Pollutant	Emission Factor (kg/MMBtu) ¹	Emission Factor (lbs/MMBtu) ²	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/year)
GHGs				
CO ₂	53.020	116.89	7,714.67	33,790
CH ₄	0.0010	0.0022	0.15	0.64
N ₂ O	0.00010	0.00022	0.01	0.06
GHGs (MB)	53.021	116.891	7,714.831	33,790.96
CO ₂ e				33,823.40

Anaerobic Digester Flare

Heat Input Needed: 54 MMBtu/hr (Methane Combustion)
Operating hours: 8,760.00 hrs/yr
Conversion Factor: 2.20462 lbs/kg

Biogas Combusted in Anaerobic Digester Flare				
Pollutant	Emission Factor (kg/ MMBtu) ¹	Emission Factor (lbs/ MMBtu) ²	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/yr)
GHGs				
CO ₂	52.070	114.795	6,198.91	27,151.21
CH ₄	0.0032	0.007	0.38	1.6686
N ₂ O	0.00063	0.001	0.08	0.3285
GHGs (mass basis)	52.074	114.803	6,199.362	27,153.21
CO ₂ e				27,288.09

NOTES:

¹GHG Emissions are based on 40 CFR 98, Tables A-1, C-1 and C-2

²Conversions from Table A-2 to Subpart A of Part 98 - Units of Measure Conversion

Total GHG Emissions from Scenario 1

Pollutant	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/yr)
GHGs		
CO ₂	13,913.58	60,941.47
CH ₄	0.53	2.3059
N ₂ O	0.09	0.3922
GHGs (mass basis)	13,914.19	60,944.17
CO ₂ e		61,111.49

GHG Emissions from Boilers and Flares (cont.)

Scenario 2: 100% Biogas combusted at Boilers, Flare not operated

Package Boilers

Heat Input Needed: 66.00 MMBtu/hr (NG Combustion)
Operating hours: 8,760.00 hrs/yr
Conversion Factor 2.20462 lbs/kg

Boilers 100% NG Combustion				
Pollutant	Emission Factor (kg/MMBtu) ¹	Emission Factor (lbs/MMBtu) ²	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/year)
GHGs				
CO ₂	52.070	114.79	7,576.44	33,185
CH ₄	0.0032	0.0071	0.47	2.04
N ₂ O	0.00063	0.00139	0.09	0.40
GHGs (MB)	52.074	114.803	7,576.998	33,187.25
CO ₂ e				33,352.11

WORST CASE EMISSIONS

- used for potential to emit calculations

Pollutant	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/yr)
GHGs		
CO ₂	13,913.58	60,941.47
CH ₄	0.53	2.3059
N ₂ O	0.09	0.4015
GHGs (mass basis)	13,914.19	60,944.17
CO ₂ e		61,111.49

Auxiliary Boiler Criteria Pollutant Emissions

Unit: Package Boiler
Fuel: Natural Gas
Size: 20.0 MMBtu/hr
Hours per year 2000 hours

Pollutant	E Factors lb/MMBtu	PTE lb/hr	PTE tpy
NOx	0.1	2.00	2.00
SO2	0.0006	0.01	0.01
CO	0.084	1.68	1.68
VOC	0.0055	0.11	0.11
PM/PM10/PM2.5	0.0075	0.15	0.15

Auxiliary Boiler Natural Gas Combustion HAPS:

Basis: Emission factors taken from AP-42, Table 1.4-3 and 1.4-4 (7/98)
Only factors for pollutants noted as HAPs as defined by Section 112(b) of the Clean Air Act listed
Factors marked as "less than" are omitted as emissions are considered negligible
Butane, ethane, propane and pentane are assumed to be combusted in the TO and assumed negl.
The following metals are not listed as HAPs; barium, copper, molybdenum, vanadium, zinc

Boiler can only operate to a total of 66MM BTU/hr, therefore this is overestimating emissions based on boiler capacity.

Units	Organic Compound	Emission Factor (lb/million ft3)	Amount Per Year (MM scf)	Emissions (lb/yr)	PTE Emissions (tpy)
	Hexane	1.8	39	70.59	0.0353
See Below	Formaldehyde	7.50E-02		2.94	0.0015
	Toluene	3.40E-03		0.13	0.0001
	Benzene	2.10E-03		0.08	0.0000
	Nickel	2.10E-03		0.08	0.0000
	Chromium	1.40E-03		0.05	0.0000
	Dichlorobenzene	1.20E-03		0.05	0.0000
	Cadmium	1.10E-03		0.04	0.0000
	Naphthalene	6.10E-04		0.02	0.0000
	Manganese	3.80E-04		0.01	0.0000
	Mercury	2.60E-04		0.01	0.0000
	Arsenic	2.00E-04		0.01	0.0000
	Cobalt	8.40E-05		0.00	0.0000
	2-Methylnaphthalene	2.40E-05		0.00	0.0000
	Phenanthrene	1.70E-05		0.00	0.0000
	Pyrene	5.00E-06		0.00	0.0000
	Fluoranthene	3.00E-06		0.00	0.0000
	Fluorene	2.80E-06		0.00	0.0000
Totals:				74.03	0.037

Boiler Natural Gas Combustion:

Boiler 2 20 MMBtu/hr 2,000 hr/yr

SUM 20 MMBtu/hr, maximum potential
 1,020 BTU/scf
 19,607.84 scf/hr, maximum potential
 39 MMscf/yr

GHG Emissions from Auxiliary Boiler

Heat Input Needed: 20 MMBtu/hr (NG Combustion)
Operating hours: 2,000.00 hrs/yr
Conversion Factor 2.20462 lbs/kg

Boiler NG Combustion				
Pollutant	Emission Factor (kg/MMBtu) ¹	Emission Factor (lbs/MMBtu) ²	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/year)
GHGs				
CO ₂	53.020	116.89	2,337.78	2,337.78
CH ₄	0.0010	0.0022	0.04	0.04
N ₂ O	0.00010	0.00022	0.004	0.004
GHGs (MB)	53.021	116.891	2,337.828	2,337.83
CO ₂ e				2,340.07

NOTES:

¹GHG Emissions are based on 40 CFR 98, Tables A-1, C-1 and C-2

²Conversions from Table A-2 to Subpart A of Part 98 - Units of Measure Conversion

Firewater Pump - Emergency Equipment (EP-15)

Basis: Manufacturer's emission factors: 275 hp diesel

Emission Factor for PM10 assumed to be all PM emissions

Equipment for Emergency Purposes, maximum of non-emergency

500 hours/year assumed as maximum operation of emergency equipment.

Emission Factors based on AP-42, Section 3.3

REMOVE FROM PERMIT
Unit is Electric, Not Diesel

Unit Description: Fire Water Pump

Unit Size: 275 hp

Pollutant	E Factors lb/hp-hr	PTE lb/yr	PTE tpy
NOx	0.0310	4262.50	0.00
SO2	0.0021	288.75	0.00
CO	0.0067	921.25	0.00
VOC*	0.0025	343.75	0.00
PM/PM-10	0.0022	302.50	0.00

Ethanol Absorption (EP-6):

Basis: Estimate and emission factors based on emission test data
Denatured Ethanol Production: 24.10 MM gal/yr
Assumed operation time: 8760 hr/yr

VOC/HAP Emissions: assumes that all ethanol production is scrubbed

Emission Source	Pollutant Type	Pollutant	Production (MMgpy)	Emission factor (lb/hr)	Controlled Emissions (tons/yr)
Fermentation Scrubber	Criteria	VOC	24.10	12.00	52.56
		PM	24.10	1.00	4.38
		PM10/PM2.5	24.10	1.00	4.38
		PM+PM10			8.76
	HAPs	Acetaldehyde	24.10	1.75	7.67
		Acrolein	24.10	0.4	1.75
		Methanol	24.10	0.4	1.75
		Formaldehyde	24.10	0.4	1.75
	Total HAPs			2.95	12.92

Emission factors are based on earlier applications for this source and NDEQ Fact Sheet

It is anticipated that the facility will pass with these emissions, as maintenance on the unit has occurred since the previous stack testing.

Emissions only increased slightly to allow for conservatism and cushion

PM/PM10 Emissions are included for conservatism, as these emissions were not accounted for in previous applications.

Paved Roads - in plant only:

Basis: 100% of grain, WDGS, ethanol, denaturant goes in/out by truck
 Grain density = 56 lb/bushel
 Trip miles based site layout, and worst case mileage.

Equation based on AP-42 Section 13.2.1 Paved Roads

$$\text{lbs/VMT Equation: } E = k (sL)^{0.91} (W)^{1.02}$$

particle size multiplier k_{PM} 0.011 dimensionless
 k_{PM-10} 0.0022 dimensionless
 $k_{PM-2.5}$ 0.00054 dimensionless
 road surface silt loading sL 3 g/m²

Emission Unit	Truck Full (tons)	Truck Empty (tons)	Average Truck (tons)	PM Emission Factor (lb/VMT)	PM 10 Emission Factor (lb/VMT)	PM 2.5 Emission Factor (lb/VMT)	Total VMT	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)	PM2.5 Emissions (tons/yr)
In plant paved roads	40.00	15.00	28.47	0.91	0.18	0.04	13,878	6.31	1.26	0.31

VTM Calculations

Product	Load Size	Amount/yr	% out by truck	# of Trips	VTM (miles)	Full (mi)	Empty (mi)
Denaturant	7500 gal	723,000 gal	100%	96	82	44	38
Denatured Ethanol	7500 gal	24,100,000 gal	100%	3,213	2,860	1,487	1,373
Grain	25 tons	237,965 tons	100%	9,519	7,329	4,104	3,225
Wet DGS	25 tons	111,325 tons	100%	4,453	3,607	1,840	1,767
Total					13,878	7,475	6,403
Percent of Total						53.9%	46.1%

Weighted Vehicle Average

$$((\text{Empty \%}) * (15)) + ((\text{Full \%}) * (40))$$

Empty Vehicle 15 Tons
 Full Vehicle 40 tons
28.47 tons

Equipment Leaks from Fugitive Components

Basis: Leak Rate (SOCMI average) multiplied by no. of components
Component counts based on previous application and facility component count
Leak Rates and VOC control from: *Protocol for Leak Emission*
Rates EPA-453/R-95-017, November 1995

Equipment	#	Leak Rate (kg/hr/source)	VOC lb/hr	VOC tpy	LDAR Control percent	VOC tpy
Light Liquid Valves	360	0.00403	3.20	14.00	84.00	2.24
Light Liquid Pumps	25	0.0199	1.10	4.80	69.00	1.49
Gas Valves	30	0.00597	0.39	1.73	87.00	0.22
Pressure Relief Valves	7	0.104	1.60	7.02	0.00	7.02
Open Pipes	35	0.0017	0.13	0.57	0.00	0.57
Sample Connections	12	0.015	0.40	1.74	0.00	1.74
Flanges (connectors)	455	0.00183	1.83	8.03	87.00	1.04
Total Fugitive Components	924	VOC Uncontrolled		37.89	Controlled	14.33

Notes:

Components in vacuum service are not inventoried and not to be inspected due to leak free nature
Components with >20% VOC by volume or >10% by weight will be part of the LDAR program
Except for valves and pumps, non-welded components and fittings treated as "flanges" for LDAR

HAP portion of VOCs:

Pollutant	Mass Fraction	VOC (tpy)	HAP (tpy)
Formaldehyde	0.000169	14.33	0.002
Acetaldehyde	0.155	14.33	2.221
Methanol	0.015	14.33	0.215
Acrolein	0.0045	14.33	0.064
Total			2.503

ICM HAP fraction derived from stack testing of Fermentation Scrubber

Wet DGS Store/Handling

Basis: 100% of Wet DGS is moved to truck by front end loader
Front end loader average weight = 2 tons
1 Front end loader trip = 10 feet

Emission Unit	Front end loader (tons)	Front end loader empty (tons)	Average Truck (tons)	PM Emission Factor (lb/VMT)	PM10/PM2.5 Emission Factor (lb/VMT)	Total VMT	PM Emissions (tons/yr)	PM10/PM2.5 Emissions (tons/yr)
In plant paved roads	3.00	1.00	2.00	0.055	0.011	190	0.005	0.001

VMT Calculations	Load Size	Amount/yr	# of Trips	VMT (miles)
	2	200,325 tons	100,163	190

Wet DGS (EP-11)

Based on Handheld VOC monitor results of 0.1 to 7.0 ppm VOC, assume VOC emissions as insignificant
Emission factor increased by factor of 10 in order to be conservative

VOC emission factor (lb/ton)	VOC emissions (tons/year)
0.0083	0.83

Wet Cake pile (EP-10)

Emission factor derived from NDEQ fact sheet and previous application package

VOC emission factor (lb/day)	VOC emissions (tons/year)
4.47	0.82

TOTAL VOC from wetcake Handling and storage	1.65
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HAP portion of VOCs:

Emission factors taken from Construction Permit fact sheet

	Emission Factor (lb/ton)	HAP (tpy)
Formaldehyde	0.000222	0.02224
Acetaldehyde	0.000111	0.01112
Methanol	0.0000444	0.00445
Acrolein	0.0000167	0.00167
Total		0.03947

Storage Tanks VOCs and HAPs:

Basis: Tanks 4.09 software (VOC), see attached tank calculations.

Notes:

Denatured Ethanol emission based on 97% being ethanol, 3% being denaturant

Tank	Stored	VOC	VOC	Acetaldehyde	Methanol	Formaldehyde	Acrolein	Benzene	Hexane	Toluene	Xylene	Cumene	Ethylbenzene	Carbon disulfide
ID	Liquid	(lb/yr)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
TK-801A	Anhydrous Ethanol	1,398.50	0.70	1.40E-04	1.40E-04	6.99E-05	6.99E-05							
TK-801B	Anhydrous Ethanol	1,398.50	0.70	1.40E-04	1.40E-04	6.99E-05	6.99E-05							
TK-803	Off-Spec Ethanol	2,428.02	1.21	2.43E-04	2.43E-04	1.21E-04	1.21E-04							
TK-810	Denatured Ethanol	384.35	1.02	1.99E-04	1.99E-04	9.93E-05	9.93E-05	7.68E-05	1.54E-03	1.54E-04	1.54E-05	3.07E-06	1.54E-06	6.14E-07
TK-808	Denaturant	2,047.58	0.19					4.80E-04	9.61E-03	9.61E-04	9.61E-05	1.92E-05	9.61E-06	3.84E-06
Total VOCs			3.828											
Total HAPs			0.015	7.21E-04	7.21E-04	3.61E-04	3.61E-04	5.57E-04	1.11E-02	1.11E-03	1.11E-04	2.23E-05	1.11E-05	4.46E-06

HAP:	Mass Fractions (VOL specific) (% / 100)
Acetaldehyde	0.0002 etoh (anhydrous/denatured etoh)
Methanol	0.0002 etoh (anhydrous/denatured etoh)
Formaldehyde	0.0001 etoh (anhydrous/denatured etoh)
Acrolein	0.0001 etoh (anhydrous/denatured etoh)
Hexane (ng)	0.05 denaturant, natural gasoline
Toluene	0.005 denaturant, natural gasoline
Benzene (ng)	0.0025 denaturant, natural gasoline
Xylenes	0.0005 denaturant, natural gasoline
Cumene	0.0001 denaturant, natural gasoline
Ethylbenzene	0.00005 denaturant, natural gasoline
Carbon disulfide	0.00002 denaturant, natural gasoline

HAP calculations (tpy) based on VOL (tpy) x HAP Mass Fraction

Loading Flare (Vapor Combustion Unit) (EP-12):

PM/PM-10/PM2.5 is negligible based on smokeless design
Natural Gas combustion only
Unit remains in standby mode with no pilot flame
Unit has automatic start-up and ignition of pilot, initiated by an electrical signal from the loading rack.

Rate 4.8 MMBtu/hr
Heating Value 850 Btu/scf
Operating time 8760 hr/yr
24,100,000 gallons loaded per year

Emission	NOx	4 mg/l	vendor data, previous application
Factors	CO	10 mg/l	vendor data, previous application
	VOC	0.0055 lb/MMBtu	(AP-42, Table 1.4-2)
	PM/PM10/PM2.5	0.0076	(AP-42, Table 1.4-2)
	SO2	0.0006	(AP-42, Table 1.4-2)
	HAP	negligible	(AP-42, Table 1.4-2)

Flaring Emissions	NOx	805 lb/year	0.40 ton/yr
	CO	2013 lb/year	1.01 ton/yr
	VOC	0.026 lb/hr	0.12 ton/yr
	PM/PM10/PM2.5	0.036 lb/hr	0.16 ton/yr
	SO2	0.003 lb/hr	0.01 ton/yr
	HAP	negligible	negligible

GHG Emissions from the Loadout Flare

Flare Design Rate: 4.8 MMBtu/hr (Methane/VOC Combustion)
Operating hours: 8,760 hrs/yr
Conversion Factor 2.20462 lbs/kg

Loadout Flare - Methane/VOC Emissions				
Pollutant	Emission Factor (kg/MMBtu) ¹	Emission Factor (lbs/MMBtu) ²	Potential Hourly Emissions (lbs/hr)	Potential Annual Emissions (tons/yr)
GHGs				
CO ₂	52.070	114.795	551.01	2,413.44
CH ₄	0.0032	0.007	0.03386	0.1483
N ₂ O	0.00063	0.001	0.00667	0.0292
GHGs (MB)	52.074	114.803	551.054	2,413.618
CO ₂ e				2,425.61

VOC emissions from Product Loading (Truck)

Basis: Assumes tanker trucks previously contained conventional gasoline and gasoline vapors are displaced as the denatured ethanol is loaded
Vapor Control system overall efficiency of 85.5%
(90% capture, 95% destruction)

Denatured Ethanol

Loading Operations	Basis:	Calculated from AP-42, Section 5.2.2 - Loading Losses
	Equation:	$12.46 * S * P * M / T$
	where:	S 1 Saturation factor (submerged)
		P 0.5652 Vapor pressure (psia)
		M 49.9431 Molar Mass (lb/lb-mole)
		T 508.12 Product Temp (deg R)
From Tanks 4.09		
	AP-42 Factor:	0.69 lb/1000 gal
<i>Losses calculated using this factor multiplied by loading rates:</i>		
Denatured Ethanol Loaded Out:		24,100,000 gal/yr
VOC Loading losses		16,682 lb/yr, uncontrolled
Controlled by vapor combustion unit		1.21 tpy, @ 85.5%

Denaturant

Loading Operations	Basis:	Calculated from AP-42, Section 5.2.2 - Loading Losses
	Equation:	$12.46 * S * P * M / T$
	where:	S 1 Saturation factor (submerged)
		P 4.2771 Vapor pressure (psia)
		M 66 Molar Mass (lb/lb-mole)
		T 508.12 Product Temp (deg R)
From Tanks 4.09		
	AP-42 Factor:	6.92 lb/1000 gal
<i>Losses calculated using this factor multiplied by loading rates:</i>		
Denaturant loaded for storage:		723,000 gal/yr
VOC Loading losses		5,005 lb/yr, uncontrolled
Controlled by vapor combustion unit		0.36 tpy, @ 85.5%

Total Loading Emissions (tpy):	1.57
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Truck and Rail Loading HAP Losses:

Truck Loading HAPS:

Composition based on typical MSDS for unleaded gasoline (mid points used)
 Most gasoline is similar in composition
 Only listed HAPs are given below
 Calculations assume that trucks carrying ethanol were carrying gasoline and
 these vapors are vented to flare during loading
 Based on 97% ethanol, and 3% denaturant

Truck Loading HAPS:

VOC from denatured ethanol loading: **1.57 tpy**
 1.53 tpy, *Ethanol portion*
 0.05 tpy, *denaturant portion*

Compound	Percent in Product	VOC Emissions (tpy)	HAP Emissions (tpy)
Benzene*	5.00%	0.05	0.002
Hexane*	10.00%	0.05	0.005
Toluene*	3.00%	0.05	0.001
Xylene*	6.50%	0.05	0.003
Trimethylbenzene*	7.00%	0.05	0.003
Naphthalene*	0.02%	0.05	0.00001
Cyclohexane*	0.05%	0.05	0.00002
Acetaldehyde**	0.0002	1.53	0.0003
Methanol**	0.0002	1.53	0.0003
Acrolein**	0.0001	1.53	0.0002
Formaldehyde**	0.0001	1.53	0.0002
Total HAPs		31.61 lb/yr	
		0.0158 ton/yr	

* Common constituent of gasoline, used for worst-case scenario

** Based on Engineer Estimates.

TANKS DATA

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Alten: TK-801A
City:	Mead
State:	Nebraska
Company:	Alten, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Anhydrous Ethanol Storage Tank

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	15.50
Liquid Height (ft):	16.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	22,600.00
Turnovers:	533.19
Net Throughput(gal/yr):	12,050,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.20

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Norfolk, Nebraska (Avg Atmospheric Pressure = 13.92 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Alten: TK-801A - Vertical Fixed Roof Tank
Mead, Nebraska

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	All	50.25	44.60	55.91	48.45	0.4673	0.3806	0.5709	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

Alten: TK-801A - Vertical Fixed Roof Tank
Mead, Nebraska

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Ethyl alcohol	1,377.09	21.41	1,398.50

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Alten: TK-801B
City:	Mead
State:	Nebraska
Company:	Alten, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Anhydrous Ethanol Storage Tank

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	15.50
Liquid Height (ft):	16.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	22,600.00
Turnovers:	533.19
Net Throughput(gal/yr):	12,050,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.20

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Norfolk, Nebraska (Avg Atmospheric Pressure = 13.92 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Alten: TK-801B - Vertical Fixed Roof Tank
Mead, Nebraska

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	All	50.25	44.60	55.91	48.45	0.4673	0.3806	0.5709	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

Alten: TK-801B - Vertical Fixed Roof Tank
Mead, Nebraska

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Ethyl alcohol	1,377.09	21.41	1,398.50

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Alten: TK-803
City:	Mead
State:	Nebraska
Company:	Alten, LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Off-Spec Tank (190 Proof Ethanol)

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	15.50
Liquid Height (ft):	16.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	22,600.00
Turnovers:	1,066.37
Net Throughput(gal/yr):	24,100,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.20

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Norfolk, Nebraska (Avg Atmospheric Pressure = 13.92 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Alten: TK-803 - Vertical Fixed Roof Tank
Mead, Nebraska

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	All	50.25	44.60	55.91	48.45	0.4673	0.3806	0.5709	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

Alten: TK-803 - Vertical Fixed Roof Tank
Mead, Nebraska

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Ethyl alcohol	2,406.61	21.41	2,428.02

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Alten: TK-808
City:	Mead
State:	Nebraska
Company:	Alten, LLC
Type of Tank:	Internal Floating Roof Tank
Description:	Denaturant Storage Tank

Tank Dimensions

Diameter (ft):	15.50
Volume (gallons):	22,600.00
Turnovers:	53.32
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal:	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	7
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Norfolk, Nebraska (Avg Atmospheric Pressure = 13.92 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Alten: TK-808 - Internal Floating Roof Tank
Mead, Nebraska

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Gasoline (RVP 10)	All	50.25	44.60	55.91	48.45	4.2771	N/A	N/A	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

Alten: TK-808 - Internal Floating Roof Tank
Mead, Nebraska

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Gasoline (RVP 10)	543.03	15.61	1,488.94	0.00	2,047.58

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Alten: TK-810
City:	Mead
State:	Nebraska
Company:	Alten, LLC
Type of Tank:	Internal Floating Roof Tank
Description:	Denatured Ethanol Storage Tank

Tank Dimensions

Diameter (ft):	47.75
Volume (gallons):	535,830.00
Turnovers:	44.98
Self Supp. Roof? (y/n):	N
No. of Columns:	1.00
Eff. Col. Diam. (ft):	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Rim-Seal System

Primary Seal:	Mechanical Shoe
Secondary Seal:	None

Deck Characteristics

Deck Fitting Category:	Typical
Deck Type:	Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Unbolted Cover, Ungasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Ungask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Ungasketed	1
Roof Leg or Hanger Well/Adjustable	14
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1

Meteorological Data used in Emissions Calculations: Norfolk, Nebraska (Avg Atmospheric Pressure = 13.92 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

Alten: TK-810 - Internal Floating Roof Tank
Mead, Nebraska

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Denatured ethanol	All	50.25	44.60	55.91	48.45	0.5254	N/A	N/A	48.5442			46.77	Option 2: A=8.12187, B=1598.673, C=226.726
Ethyl alcohol						0.4673	N/A	N/A	46.0700	0.9700	0.8312	46.07	Option 2: A=8.321, B=1718.21, C=237.52
Gasoline (RVP 10)						4.2771	N/A	N/A	66.0000	0.0300	0.1688	92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

Alten: TK-810 - Internal Floating Roof Tank
Mead, Nebraska

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Denatured ethanol	129.32	114.09	140.93	0.00	384.35
Ethyl alcohol	107.50	110.67	117.14	0.00	335.31
Gasoline (RVP 10)	21.83	3.42	23.79	0.00	49.04

TANKS 4.0.9d
Emissions Report - Summary Format
Total Emissions Summaries - All Tanks in Report

Emissions Report for: Annual

Tank Identification				Losses (lbs)
Alten: TK-801A	Alten, LLC	Vertical Fixed Roof Tank	Mead, Nebraska	1,398.50
Alten: TK-801B	Alten, LLC	Vertical Fixed Roof Tank	Mead, Nebraska	1,398.50
Alten: TK-803	Alten, LLC	Vertical Fixed Roof Tank	Mead, Nebraska	2,428.02
Alten: TK-808	Alten, LLC	Internal Floating Roof Tank	Mead, Nebraska	2,047.58
Alten: TK-810	Alten, LLC	Internal Floating Roof Tank	Mead, Nebraska	384.35
Total Emissions for all Tanks:				7,656.93

**BACKUP
DOCUMENTATION**



TEST DATA

EXECUTIVE SUMMARY

E3 Biofuels Mead, LLC - Mead, Nebraska
American Engineering Testing, Inc. October 16-19, 2007

Emissions testing were conducted on the Fermentation/Distillation scrubber, Boiler, Grain Receiving baghouse, and Hammermill baghouse on October 16-19, 2007. The results are summarized below:

Emission Unit Tested	Pollutant	Emission Unit Limit	Test Result
Fermentation/Distillation Scrubber (EP-6)	VOCs	< 7.0 Lbs/Hr Removal efficiency – No requirement	13.54 Lbs/Hr 89.9 % Removal
	HAP	< 10 individual < 25 total Tons/year facility-wide Removal efficiency – No requirement	2.92 Lbs/Hr 36.2 % Acetaldehyde Removal
Boiler (EP-4)	NO _x	No requirement	5.73 Lbs/Hr
	Ammonia Content of Biogas	No Requirement	< 0.38 PPMV
Grain Receiving Baghouse (EP-1)	PM/PM ₁₀	0.62 Lbs/Hr	0.311 Lbs/Hr
Hammermill Baghouse (EP-3)	PM/PM ₁₀	0.19 Lbs/Hr	0.0466 Lbs/Hr

Fermentation/ Distillation Scrubber Emissions – October 19, 2007

	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Acetaldehyde, Lbs/Hr	2.70	3.31	2.75	2.92
Acetic Acid, Lbs/Hr	< 0.079	< 0.150	< 0.131	< 0.120
Acrolein, Lbs/Hr	< 0.262	< 0.560	< 0.490	< 0.437
Ethanol, Lbs/Hr	7.66	12.45	10.10	10.07
Ethyl Acetate, Lbs/Hr	0.429	0.660	0.577	0.555
Formaldehyde, Lbs/Hr	< 0.056	< 0.075	< 0.066	< 0.066
Formic Acid, Lbs/Hr	< 0.026	< 0.046	< 0.040	< 0.037
Methanol, Lbs/Hr	< 0.120	< 0.200	< 0.175	< 0.165
Total Detected VOCs, Lbs/hr	10.79	16.42	13.42	13.54 ⁽¹⁾
Scrubber Makeup Water Flow Rate, (gpm)	16	16	16	16
Beer Feed Flow Rate, (gpm)	330	320	300	317
Ethanol Flow Rate (gpm)	33	33	33	33

(1) 13.54 Lbs/Hr represents the sum of the detected volatile organic compounds.

EXECUTIVE SUMMARY (continued)

Boiler Emissions – October 18, 2007

	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
NO _x , Lbs/Hr	6.09	5.80	5.30	5.73
Boiler 1 Firing Rate (%)	49	50	44	48
Boiler 2 Firing Rate (%)	33	36	36	35
Boiler 1 Biogas Flow (SCFM)	810	810	810	810
Biogas Ammonia Concentration (PPMV)	< 0.28	< 0.29	< 0.28	< 0.38

Grain Receiving Baghouse Emissions – October 17, 2007

<u>Filterable Particulate Emission Results</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Particulate Mass Rate, lbs/hr:	0.137	0.0859	0.0644	0.0958

Organic Condensibles Emission Results

Particulate Mass Rate, lbs/hr:	0.0254	0.0480	0.0550	0.0428
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Inorganic Condensibles Emission Results

Particulate Mass Rate, lbs/hr:	0.172	0.174	0.171	0.172
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Total Particulate Emission Results

Particulate Mass Rate, lbs/hr:	0.335	0.307	0.290	0.311
--------------------------------	-------	-------	-------	-------

Baghouse Pressure Drop, in. H ₂ O	2.5	2.5	2.5	2.5
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Hammermill Baghouse Emissions – October 16, 2007

<u>Filterable Particulate Emission Results</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Particulate Mass Rate, lbs/hr:	0.0249	0.0252	0.0431	0.0311

Organic Condensibles Emission Results

Particulate Mass Rate, lbs/hr:	0.00240	0.00259	0.00339	0.00279
--------------------------------	---------	---------	---------	---------

Inorganic Condensibles Emission Results

Particulate Mass Rate, lbs/hr:	0.0154	0.0125	0.0102	0.0127
--------------------------------	--------	--------	--------	--------

Total Particulate Emission Results

Particulate Mass Rate, lbs/hr:	0.0428	0.0402	0.0567	0.0466
--------------------------------	--------	--------	--------	--------

Baghouse Pressure Drop, in. H ₂ O	3.4	3.4	3.5	3.4
--	-----	-----	-----	-----

**Table 3-1:
Fermentation/Distillation Scrubber Testing Summary**

<u>VOC/HAP Emissions</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Date	10/19/07	10/19/07	10/19/07	
Time	10:52-14:52	15:09-19:09	19:25-23:25	
Avg Volumetric Flow (SCFM)	1200	1600	1400	1400
Scrubber Makeup Water Flow (GPM)	16	16	16	16
Acetaldehyde (PPMV)	327	301	286	305
Acetaldehyde (LB/HR)	2.70	3.31	2.75	2.92
Acetic Acid (PPMV)	< 7.0	< 10	< 10	< 9.0
Acetic Acid (LB/HR)	< 0.079	< 0.150	< 0.131	< 0.120
Acrolein (PPMV)	< 25	< 40	< 40	< 35
Acrolein (LB/HR)	< 0.262	< 0.560	< 0.490	< 0.437
Ethanol (PPMV)	888	1082	1003	991
Ethanol (LB/HR)	7.66	12.45	10.10	10.07
Ethyl Acetate (PPMV)	26	30	30	29
Ethyl Acetate (LB/HR)	0.429	0.660	0.577	0.56
Formaldehyde (PPMV)	< 10	< 10	< 10	< 10
Formaldehyde (LB/HR)	< 0.056	< 0.075	< 0.066	< 0.066
Formic Acid (PPMV)	< 3.0	< 4.0	< 4.0	< 3.7
Formic Acid (LB/HR)	< 0.026	< 0.046	< 0.040	< 0.037
Methanol (PPMV)	< 20	< 25	< 25	< 23
Methanol (LB/HR)	< 0.120	< 0.200	< 0.175	< 0.165
Total Detected VOC (LB/HR)	10.79	16.42	13.42	13.54
<u>VOC Removal Efficiency</u>				
Date	10/19/07	10/19/07	10/19/07	
Time	11:00-12:00	12:25-13:25	15:25-16:25	
Avg Volumetric Flow (SCFM)	1200	1200	1600	1333
Scrubber Makeup Water Flow (GPM)	16	16	16	16
Scrubber Inlet, as carbon (LB/HR)	47.7	50.1	63.6	53.8
Scrubber Outlet, as carbon (LB/HR)	4.78	5.16	6.37	5.44
Removal Efficiency (%)	90.0	89.7	90.0	89.9
<u>HAP Removal Efficiency</u>				
Date	10/19/07			
Time	19:25-23:25			
Avg Volumetric Flow (SCFM)	1400			
Scrubber Makeup Water Flow (GPM)	16			
Scrubber Inlet, Acetaldehyde (LB/HR)	4.31			
Scrubber Outlet, Acetaldehyde (LB/HR)	2.75			
Removal Efficiency (%)	36.2			

**Table 3-2:
Boiler Emissions Summary**

<u>Volumetric Air Flow Data</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Stack Temperature, °F	399	392	394	395
Stack Oxygen, %	4.3	4.2	4.2	4.2
Stack Carbon Dioxide, %	12.3	12.6	12.2	12.4
Moisture, %	16.4	18.9	16.6	17.3
Stack Flow Rate, DSCFM	15,900	15,000	14,600	15,167
 <u>NO_x Emission Results</u>	 <u>Run #1</u>	 <u>Run #2</u>	 <u>Run #3</u>	 <u>Average</u>
NO _x concentration, ppmv	53.4	53.9	50.6	52.6
NO _x Mass Rate, lbs/hr:	6.09	5.80	5.30	5.73
 <u>Biogas Ammonia Content</u>	 <u>Run #1</u>	 <u>Run #2</u>	 <u>Run #3</u>	 <u>Average</u>
Sample Volume, liters	30	15	33	26
Ammonia collected, ug	< 6.0	< 6.3	< 6.5	< 6.3
Ammonia concentration, ppmv	< 0.28	< 0.59	< 0.28	< 0.38
 <u>Boiler Operating Parameters</u>	 <u>Run #1</u>	 <u>Run #2</u>	 <u>Run #3</u>	 <u>Average</u>
Boiler 1 Firing Rate (%)	49	50	44	48
Boiler 2 Firing Rate (%)	33	36	36	35
Boiler 1 Biogas Flow (SCFM)	810	810	810	810

Table 3-3:
Grain Receiving Baghouse Outlet Emissions Summary

Particulate Matter (PM) Results				
Air Flow Data	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Stack Temperature, °F	69	65	65	66
Stack Oxygen, %	20.9	20.9	20.9	20.9
Stack Carbon Dioxide, %	0.03	0.03	0.03	0.03
Moisture, %	2.0	1.6	1.7	1.8
Stack Flow Rate, DSCFM	12,900	13,500	13,200	13,200
Isokinetic Variation, %	102.7	100.5	102.0	101.7
Filterable Particulate Emission Results				
Particulate Concentration, grains/dscf:	0.00124	0.000742	0.000569	0.000850
Particulate Mass Rate, lbs/hr:	0.137	0.0859	0.0644	0.0958
Organic Condensibles Emission Results				
Particulate Concentration, grains/dscf:	0.000230	0.000415	0.000486	0.000377
Particulate Mass Rate, lbs/hr:	0.0254	0.0480	0.0550	0.0428
Inorganic Condensibles Emission Results				
Particulate Concentration, grains/dscf:	0.00156	0.00150	0.00151	0.00152
Particulate Mass Rate, lbs/hr:	0.172	0.174	0.171	0.172
Total Particulate Emission Results				
Particulate Concentration, grains/dscf:	0.00303	0.00266	0.00257	0.00275
Particulate Mass Rate, lbs/hr:	0.335	0.307	0.290	0.311
Baghouse Pressure Drop, in. H ₂ O	2.5	2.5	2.5	2.5

**Table 3-4:
Hammermill Baghouse Outlet Emissions Summary**

Particulate Matter (PM) Results				
<u>Air Flow Data</u>	<u>Run #1</u>	<u>Run #2</u>	<u>Run #3</u>	<u>Average</u>
Stack Temperature, °F	71	72	72	72
Stack Oxygen, %	20.9	20.9	20.9	20.9
Stack Carbon Dioxide, %	0.03	0.03	0.03	0.03
Moisture, %	2.8	3.0	2.0	2.6
Stack Flow Rate, DSCFM	900	800	800	833
Isokinetic Variation, %	99.7	100.1	97.9	99.2
<u>Filterable Particulate Emission Results</u>				
Particulate Concentration, grains/dscf:	0.00323	0.00367	0.00628	0.00439
Particulate Mass Rate, lbs/hr:	0.0249	0.0252	0.0431	0.0311
<u>Organic Condensibles Emission Results</u>				
Particulate Concentration, grains/dscf:	0.000311	0.000378	0.000495	0.000395
Particulate Mass Rate, lbs/hr:	0.00240	0.00259	0.00339	0.00279
<u>Inorganic Condensibles Emission Results</u>				
Particulate Concentration, grains/dscf:	0.00200	0.00182	0.00149	0.00177
Particulate Mass Rate, lbs/hr:	0.0154	0.0125	0.0102	0.0127
<u>Total Particulate Emission Results</u>				
Particulate Concentration, grains/dscf:	0.00554	0.00587	0.00827	0.00656
Particulate Mass Rate, lbs/hr:	0.0428	0.0402	0.0567	0.0466
Baghouse Pressure Drop, in. H ₂ O	3.4	3.4	3.5	3.4

COPY OF VARIANCE REQUEST



AltEn, LLC
1344 County Road 10
Mead, NE 68041

January 17, 2013

Mr. Michael Linder
Nebraska Department of Environmental Quality
Attn: Legal Division
1200 N Street, Suite 400
Lincoln, NE 68509-8922

**RE: Greenhouse Gas (GHG) Deferral Variance Request
AltEn, LLC
NDEQ Facility ID#: 84069**

Dear Mr. Linder:

Please find enclosed a Variance Application for AltEn, LLC seeking approval to defer CO₂ emissions from the fermentation scrubber located at their facility. In 2012, Shelley Schneider of the Air Quality Division of the NDEQ, sent a correspondence advising NDEQ's proposal to adopt the federal deferral for CO₂ emissions generated by biogenic sources was denied causing Nebraska Air Quality Regulations to be stringent than the Federal Program.

To avoid the imposition of this requirement in AltEn's permit modification application (to be submitted in the near future), it was advised to initiate the process of adding a variance condition to the permit to allow AltEn to conform to the CO₂ deferral. The Variance Request Form is being submitted to allow AltEn to adopt the deferral of CO₂ emissions generated by biogenic sources (i.e. fermentation), allowing the facility to remain a Class II Operating Source.

Please do not hesitate to contact either myself at (319) 360-2127 or our consultant, Ms. Lauren Taylor of ERI Solutions at (316) 927-4262 if you have any questions or require any additional information.

Sincerely,

Jim Stewart
Plant Manger
AltEn, LLC

C.c.: L. Taylor, ERI Solutions, Inc.



Nebraska Department of Environmental Quality

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IIS # _____

AIR QUALITY PERMITS SECTION * 1200 N STREET, SUITE 400 * LINCOLN, NE 68509-8922
TEL: (402) 471-2189 * FAX: (402) 471-2909 * CONSTRUCTION PERMIT HOTLINE: (877) 834-0474
WEB SITE: www.ndeq.state.ne.us

VARIANCE APPLICATION SEEKING AUTHORITY TO INITIATE CONSTRUCTION PRIOR TO AIR PERMIT ISSUANCE

Title 129 – Air Quality Regulations, require certain new, reconstructed, or modified sources of air pollution to obtain an air quality construction permit before construction activities may begin. Title 129 Chapters 17 and 19 detail when a permit must be obtained. Under extraordinary circumstances, the Director may by variance allow you, at your own risk, to begin prior to obtaining a permit. You may apply for a variance under Neb. Rev. Stat. §81-1513 by submitting this form. The variance is not a permit. Sources constructing are not released from the obligation to ultimately obtain a permit.

THE DEPARTMENT RESERVES THE RIGHT TO REQUIRE ADDITIONAL INFORMATION TO SUPPLEMENT THIS APPLICATION. THIS FORM IS FOR THE CONVENIENCE OF THE APPLICANTS AND THE DEPARTMENT. IT IS INTENDED TO MAKE REQUESTS MORE EFFICIENT AND EXPEDITIOUS, BUT IS NOT MANDATORY.

(PLEASE PRINT IN BLACK INK OR TYPE ALL INFORMATION)

FACILITY INFORMATION:

Name of Facility AltEn, LLC

Address of Facility 1344 County Road 10 Mead NE 68041
Street, Rural Route or P.O. Box City State Zip

Legal Description 12 14 08 ☒ E or ☐ W Saunders County
1/4 1/4 Section Township Range

Distance to Nearest Residences or Other Occupied Buildings *(Please list name and distances)*

There are two (2) residences located one (1) mile north of the facility and a National Guard

Training facility one (1) mile south of the facility.

Facility Contact Information Jim Stewart

Plant Manager

Phone No(s). () (319) 360 2127 jstewart@mrgkc.com
Name Title
(Work) (Other) (Email address)

CONSTRUCTION ACTIVITY REQUESTED *(Please detail all construction activities for which you want the variance):* Deferral for CO2 emissions generated by biogenic sources (i.e. fermentation).

OTHER INFORMATION: PLEASE ANSWER THE FOLLOWING QUESTIONS:

Have you submitted a construction permit application? ☐ Yes ☒ No NOTE: Facility will be submitting a construction permit modification in the near future.
If yes, date submitted _____

Have you received complaints from neighbors regarding your operations or planned activities? ☐ Yes ☒ No

If yes, what is the nature of the complaints and how have you resolved these issues?

Please explain the reasons you are unable to wait to construct until you receive your permit?

Deferral of CO2 emissions generated by biogenic sources enables AltEn to remain a Class II Source.

Do you agree not to operate the items that you construct by virtue of a variance until after you received a permit? ☐ Yes ☐ No N/A - the facility currently has a construction permit. A modification will be submitted to include equipment not previously permitted.

A copy of the planned construction schedule is included with this application. ☐ Yes N/A - the facility is an existing operating source.

The Director, in considering your variance request, must take into consideration at least the following: (a) The character and degree of injury to or interference with the health and physical property of the people; (b) The social and economic value of the source of the air, water, or land pollution; (c) The question of priority of location of the area involved; and (d) The technical practicability and economic reasonableness of reducing or eliminating the emissions or discharges resulting from the source. Please provide details on circumstances you wish the Director to consider that addresses each of these elements. Feel free to supplement the application with additional material. The purpose of the variance is related to NDEQ's proposed adoption of the federal deferral of

CO2 emissions generated by biogenic sources and requested submittal of the variance to provide coverage under a condition in the permit to allow conformation to the Federal Rule and deferral.

Do you understand that a variance, if granted, must not be construed as a guarantee that an air quality construction will ultimately be issued? ☒ Yes ☐ No

Do you agree to assume all risks that your construction permit may be denied or, if issued, that the permit may require that you retrofit any installations to meet the permit requirements? ☒ Yes ☐ No

RESPONSIBLE OFFICIAL CERTIFICATION OF TRUTH, ACCURACY, & COMPLETENESS

I certify that this information is true, accurate and complete to the best of my knowledge and belief and that, under the laws of the State of Nebraska, I have the authority to sign on behalf of the facility for which this request is being submitted.

Jim Stewart

Printed or Typed Name of Responsible Official

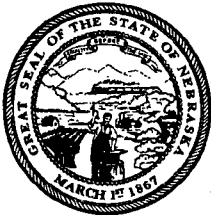
Plant Manager

Title

Notarized Signature of Responsible Official

Date of Signature

AIR INSPECTION LETTER



STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY
Michael J. Linder

Director

Suite 400, The Atrium

1200 'N' Street

P.O. Box 98922

Lincoln, Nebraska 68509-8922

Phone (402) 471-2186

FAX (402) 471-2909

website: www.deq.state.ne.us

AltEn, LLC
Scott Asner
420 Nichols Road STE 205
Kansas City, MO 64112

RE: January 5, 2012, Air Quality focused evaluation
AltEn, LLC, 1344 County Road 10 Mead, NE 68041-4036
FID# 84069

Dear Mr. Asner:

On January 5, 2012, this department conducted an Air Quality focused inspection at the above facility. A copy of the inspection report is enclosed for your reference. The department identified the following potential permitting concerns as a result of this inspection.

1. The replacement for boiler B-2 (damaged by an explosion) should be evaluated by the Permitting Section to ensure it meets the sizing of the original construction permit (see observation 1.a. of the inspection report).
2. The auxiliary boiler should be evaluated for inclusion in the construction permit modification (see observation 1.c. of the inspection report).
3. You must have as-built drawings available for review by inspectors (see observation 1.g. of the inspection report).
4. Remove from the construction permit the 275 HP diesel engine (see observation 1.n. of the inspection report).
5. The scalper / day tank baghouse should be considered for inclusion in the construction permit (see observation 3.b. of the inspection report).
6. Construction permit condition XIII(b)(1) should be considered for modification to identify the correct type of grain cleaning equipment at the site (see observation section, note 4 of the inspection report).
7. Construction permit condition XIII(b)(1) should be considered for modification to correctly identify the equipment controlled by the mill baghouse, EP-3 (see observation section, note 4 of the inspection report).

8. The installation of an RTO must be evaluated for construction permit requirements prior to installing the unit.
9. Obtain a current site diagram identifying the re-platted site boundaries, ownership, and the location of all facility equipment and emission points (see observations 3.f. and 4 of the inspection report).

Submit a permit application to the attention of Mr. Clark Smith, Permitting Section Supervisor, at least 30-days prior to initiating operation of the facility. Direct all permit-related comments to Mr. Smith at (402) 471-4204.

Respectfully,



Ken Almquist, Unit Supervisor
Inspection and Compliance Unit
Air Quality Division

Enclosure

copy: Mr. J. Stewart, AltEn, LLC, Mead

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR CONSTRUCTION PERMIT MODIFICATION APPLICATION

FOR

**ALTEN, LLC
Mead, Nebraska
Facility ID: 84069**

**PREPARED FOR:
AltEn, LLC
1344 County Road 10
Mead, NE 68041**

January 2013

